

**Wasted Lives: Determining the Feasibility of
Establishing a Test Case Resource Recovery
Programme in the Urban Poor Community of
Faux-a-Chaud, Saint Lucia**

By

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Abstract

The term resource recovery, in its broadest sense includes the “repairing, refurbishing, or remanufacturing of discarded goods; the separating, reprocessing, and recycling of raw materials such as glass, paper, or aluminum; and the processing of selected fractions of the waste stream into new products such as compost or energy”, (Bartone 1990, p.7). According to the World Bank/UNDP Integrated Resource Recovery Project, highly developed informal sector networks of refuse scavenging (resource recovery) already exist in almost all developing countries as a response to rapid and dramatic increases in population of urban centres. This has led to a rise in the levels of urban poverty and an inability of governments to cater to the rising demands for basic infrastructure services such as solid waste management. As such, the marginalized urban poor are exposed to numerous environmental hazards. Therefore, resource recovery by the urban poor has been identified as a means of alleviating urban poverty, enhancing environmental sustainability and bettering communities.

In the small island developing state of Saint Lucia, levels of urban poverty are on the rise and inadequate solid waste management services threaten the island’s fragile ecosystem while disproportionately affecting marginalized groups. As such, the researcher sought to determine the feasibility of establishing a test case resource recovery programme in an urban poor community, from a social and policy perspective. The study was examined using the conceptual framework of sustainable community development based on the four principles of social equity, environmental integrity, good governance (democratic decision-making processes) and economic viability. The results denoted that there were no real policy barriers to the establishment of a resource recovery programme. However, the lack of legislation on more sustainable waste minimization strategies highlighted the lack of political will among past and present government administrations to move towards a more sustainable agenda despite their commitments to the Millennium Development Goals (MDGs) and Agenda 21. The social element denoted several challenges with regard to community cohesion and participation, representation, and consumption and waste disposal patterns of behaviour.

Keywords: Resource recovery; Urban poverty; Environmental Hazards; Solid Waste Management; Small Island Developing States; Sustainable Development.

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1 Introduction

In 1995, efforts to mobilize global action to end poverty culminated in the World Summit on Social Development, which set international goals towards this endeavour. By 2001 the UN Secretary-General's Road Map towards the Implementation of the Millennium Declaration (UN 2001) formally unveiled eight goals, which became the Millennium Development Goals (MDGs). These eight goals include: 1. end poverty and hunger, 2. universal education, 3. gender equality, 4. child health, 5. maternal health, 6. combat HIV/AIDS, 7. environmental sustainability 8. global partnerships, (UN official website 2011). However, it has been noted that achieving the MDGs, in particular the eradication of extreme poverty and hunger, and environmental sustainability (two of their eight goals), will depend to a large extent on how well developing country governments manage their cities (Cohen 2006, p.63).

In the last twenty years, urban areas around the globe have experienced rapid growth due to the dramatic increase in population, as well as the combination of technological and political changes which have transformed the global economy. Cities are now home to approximately three billion people – half the world's population – and command a dominant role in the global economy as centres of production and consumption, (Cohen 2006, p.26). Moreover, in the next thirty years the majority of the world's two billion person increase is expected to occur in urban centres of the developing world, giving rise to a developing world more urban in character than rural, (Cohen 2006, p.64). However, rapid, urban population growth has given rise to several

negative ramifications for present and future development. Some areas of concern include: the rising demand for infrastructure services resulting from urban development and the challenge of expanding those quickly enough; the degradation of the human environment resulting from growing cities that has given rise to health problems, water, air and land pollution and put pressure on resource bases; and the dramatic increase in urban poverty which has led to the marginalization and exclusion of vast numbers of urban-dwellers, (UN-Habitat 2009, p.18).

In the developing world, these marginalized urban-dwellers live in over-crowded and unsanitary slums/ghettos, increasingly clustering in illegal squatter settlements in peripheral urban areas (e.g. flood plains, steep slopes or adjacent to dangerous industries) that are widely exposed to natural and man-made environmental hazards, (Satterthwaite 2003, 74). The concentration of these ghettos within the urban core places immense pressure on urban infrastructure in many developing world cities, already overburdened with the provision of basic services. As a result, the citizens (particularly the urban poor) face inadequate basic services such as water, sanitation, and solid waste management, (Satterthwaite 2003, 76). The recognition of the interconnected relationship between phenomena such as rapid, unregulated urbanization, inadequate basic services, urban poverty and environmental hazards has been paramount in guiding international initiatives to seeking more integrated approaches to sustainable development and poverty alleviation. More specifically, by addressing the particular deprivations directly affecting the poor, and indirectly associated with larger global phenomena, sustainable solutions can be developed that provide more focused and specialized attention to the plight of those most in need. In this way, such initiatives are more relevant to the populations they are meant to help and the impacts more immediate.

In this regard, solid waste management has been recognized as an important facet of sustainable development for any nation, and the prioritization of solid waste management has been greatly supported by global initiatives. In 1992, recognizing the stark juxtaposition and perpetuation of disparities within and between nations ecologically, economically and socially, the international community adopted Agenda 21 during the United Nations Conference on Environment and Development. More specifically, chapter 21 of Agenda 21 explicitly affirmed that the environmentally sound management of waste was among the environmental issues of major concern in maintaining the quality of Earth's environment and especially in achieving sustainable development in all countries, (UNDESA 2005). In addition, according to statistical projections by the United Nations at this time, by the end of the century, over 2.0 billion people would be without access to basic sanitation, and an estimated half of the urban population in developing countries would be without adequate solid waste disposal services, (Rio Declaration on Environment and Development 1992, p.263). The health and environmental impacts go beyond the underserved urban settlements and result in water, land and air pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution, and addressing a key deprivation for the urban poor, (Rio Declaration on Environment and Development 1992, p.263). Towards this end, the United Nations Development Programme (UNDP) has been involved in slum upgrading and poverty eradication policies. These policies are based on an action framework that seeks to alleviate poverty by addressing basic deprivations experienced by the poor, by providing services such as water and sanitation, sustainable energy services, and solid waste management, (Rajack et al. 2004, p.8).

In the Caribbean region, solid waste management is a significant aspect of the sustainable development agenda, and most of the region's small island developing states (SIDS) have agreed to implement Agenda 21 and signed on to the MDGs, (UNEP and CEHI, 2004). Saint Lucia is one of the SIDS within the Caribbean that has taken action to improve its waste management system through the establishment the St. Lucia Solid Waste Management Authority (SLSWMA) in 1996, (St. Lucia Solid Waste Management Authority official website, 2007). Although the SLSWMA has made strides in ameliorating the solid waste management system in Saint Lucia, it has been unable to keep up with the effects of the restructuring of the global economy and the profound rural to urban migration over the last twenty years - the scale and speed of which has inundated the ability of the government, and the SLSWMA in particular - to provide the necessary infrastructure and basic services. In addition, significant rural-urban migration had contributed to the rapid unplanned, increase and expansion of low-income settlements within the country's capital city of Castries and towns of Gros-Islet, Vieux-Fort and Soufriere.

Between the first Saint Lucia Country Poverty Assessment Report in 1995 and the second report in 2005/6, the proportion of urban poverty may be estimated to have increased from approximately 7% to 16% based on estimates by the UN-Habitat country profile, (UN-Habitat official website 2001). The UN-Habitat country profile estimated Saint Lucia's urban population at 38% in 2001, of which 12% were slum dwellers. The urban slum population was also estimated to be growing by 1% per annum, (UN-Habitat official website, 2001). The 2005/6 Report describes urban communities as denoting a lack of physical space leading to overcrowding, poor drainage and flooding, poor sanitation and inadequate storage of food, littering and inadequate means for proper garbage disposal, an absence and poor condition of toilet facilities, sewage problems,

as well as a prevalence of rats and mosquitoes, (Kairi Consultants 2006, p.28). These unfavourable conditions create numerous environmental hazards for the residents of these communities which further contribute to the perpetuation of the cycle of poverty.

In response to these growing issues, the urban poor in many developing countries have capitalized on the inadequate solid waste management services in the city and the simultaneous increase in waste production in these areas, by utilizing their local knowledge of recovery, reuse, and recycling, which has been characteristic of poor populations for centuries. From the “Jua Kali” (Swahili for “hot sun”) in Kenya, the Zabbaleen in Cairo, Egypt, the homeless from the streets of the Downtown East Side in Vancouver (Tremblay et al. 2010, p.422), to the “Catadores” in Brazil, groups of urban poor from around the world have engaged in the extraction of recyclable and reusable materials from mixed waste. These groups represent poor and marginalized social, ethnic and/or religious (Zabbaleen) groups that resort to scavenging (informal waste picking) for income generation and some even for everyday survival, (Wilson et al. 2006, p.798). Some such as the Jua Kali and Catadores produce goods for sale, made from the recovered waste. From an economic perspective, resource recovery can be extremely beneficial to developing countries due to the fact that: “they are well adapted to the prevailing conditions, namely abundant supply of working force, but scarce capital; and they minimize capital expenditures and maximize hand (and animal) power,” (Wilson et al. 2006, p.802). They are also able to provide a steady, reliable supply of secondary raw materials for local manufacturing industry which can replace more expensive imported raw materials; this also stimulates the manufacture of low-cost, affordable products made from recycled materials, (Wilson et al. 2006, p.802).

Given the benefits associated with this activity, the researcher is of the impression that establishing a resource recovery programme - with an emphasis on the

manufacturing of affordable products made from the recycled materials - in an urban poor community in Saint Lucia could greatly benefit the population by providing employment opportunities, and also improving the living conditions by addressing the solid waste management issue in the community. As such, this research study aims to deduce whether such an endeavour is feasible.

1.1 Objective

The purpose of this research study is to determine the feasibility of establishing a test case resource recovery programme in the urban poor community of Faux-a-Chaud, Saint Lucia. Given the significant interplay between inadequate solid waste management services and the opportunities for survival through resource recovery among the urban poor, as noted above, the lack of information on these issues in Saint Lucia warrant further research in this area. By focusing on the urban poor, this research would bring to light the differences in the experiences and expression of poverty in Saint Lucia, thereby emphasizing the need for anti-poverty programmes tailored to the specific orientation of deprivations experienced by the urban poor. Moreover, by engaging in a feasibility study to explore and identify the social and policy barriers to and incentives for the development of a test case resource recovery programmes in a SIDS context, this study could provide the necessary foundation for future action frameworks/initiatives that simultaneously address urban poverty and contribute to sustainable development. And finally, this research will contribute to filling the current knowledge gap that exists on the utilization of resource recovery practices as a sustainable anti-poverty strategy for SIDS.

1.2 Rationale

The primary motivation for studying urban poverty within the frame work of solid waste management is due to the growing recognition of the economic, social and environmental benefits of the informal sector in solid waste management by the urban poor, in developed and developing countries alike, (Wilson et al. 2006). Resource recovery - the collection of recyclable materials from the waste stream and urban environment - by the urban poor can contribute to poverty alleviation, environmental sustainability and better communities, (Tremblay et al. 2010, p.422).It is deemed an appropriate solution that would enable cities to improve their waste-management capacity and make better use of limited resources, financial and otherwise, by recovering the value inherent in wastes, while also providing jobs, improving living conditions and protecting the environment, (Bartone 1990, 17). Moreover, although composting for the production of fertilizer used in gardening is often ignored within the rhetoric of 'informal resource recovery', the researcher believes that food security is an important issue for any small island developing state, particularly among the poor. Furthermore, a resource recovery programme could easily integrate a composting aspect, and the researcher would argue that a programme without one would be incomplete, given that one of the main goals is waste minimization.

According to studies carried out by the World Bank/UNDP Integrated Resource Recovery Project, highly developed informal sector networks of refuse scavenging (resource recovery) already exist in almost all developing countries, (Bartone 1990, p.15). Although urban poverty is a relatively new but increasing phenomenon in Saint Lucia, there is little evidence to denote that the urban poor population has tapped into resource recovery. As such, the benefits of resource recovery particularly for a small

island developing state (SIDS) such as Saint Lucia - which is by definition ecologically and economically vulnerable due to its small physical size and small population - make exploring this activity through research, a highly valuable endeavour. Studying the urban poor in Saint Lucia would help to identify whether or not the urban poor are participating in resource recovery as a coping mechanism to deal with the inadequacies of the waste management system, as well as using it to sustain their livelihoods. Therefore, this research aims to fill in this knowledge gap. In addition, resource recovery provides one more lens through which the solid waste management practices of the urban poor in Saint Lucia may be understood, and may expose opportunities for urban poor communities to capitalize on this undervalued, yet long-standing approach.

The research study focuses on the social and policy aspects of feasibility due to the narrow scope that this case study project is expected to cover. The social aspect is considered most critical by the researcher due to her ideological leaning towards sustainable development and her belief that socially inclusive and equitable development tends better to come from the ground up (the community level). The people who are most directly affected by development planning are also often the ones in the best position to inform development processes to best address their needs. In this study, those people are the residents of the urban poor community of Faux-a-Chaud (FAC), a neighbourhood in the Island's capital, Castries. Assessing their interest in a resource recovery programme determines whether such a project should be pursued. Examining the policy aspect is also important because there may be administrative, political and/or legislative barriers to pursuing such a programme and administrative, political and/or legislative solutions to support such a programme. As such, it is necessary to identify potential obstacles and/or possible solutions and determine how they may hinder and/or assist such programme development. Moreover, understanding

the policy aspect and the various stakeholders involved may bring to light various opportunities for the successful establishment of a resource recovery programme, such as securing funding, and other forms of support.

1.3 Organization of Research Study

The research is organized to include an introduction, followed by a brief review of the political, economic, social, and environmental context of Saint Lucia that will inform the case study of Faux-a-Chaud, a literature review, the methodology, the data results and analysis, recommendations, and a conclusion. Chapter one, the introduction, encompasses the main themes and theoretical threads associated with the research topic. It also provides the objective and rationale guiding the research study. Chapter 2 provides an overview of the case study location that is Saint Lucia. This context overview situates the case study and research topic as it relates to a particular geographic, cultural, socio-economic and political context. Chapter 3, the literature review, provides details into the three main theoretical frameworks that were introduced in Chapter one. The main theoretical frameworks are sustainable development, urban poverty and the environment, and resource recovery in developing countries. These theoretical frameworks will then be linked to the case study. Chapter 4 describes the methodological approaches of this study which are ethnographical and inductive in nature. It also discusses ethical considerations, limitations and strengths of the research process. Chapter 5 presents and analyzes the data collected from the researcher's case fieldwork. Chapter 6 provides recommendations regarding the feasibility of establishing the resource recovery programme and some closing remarks regarding the overall study.

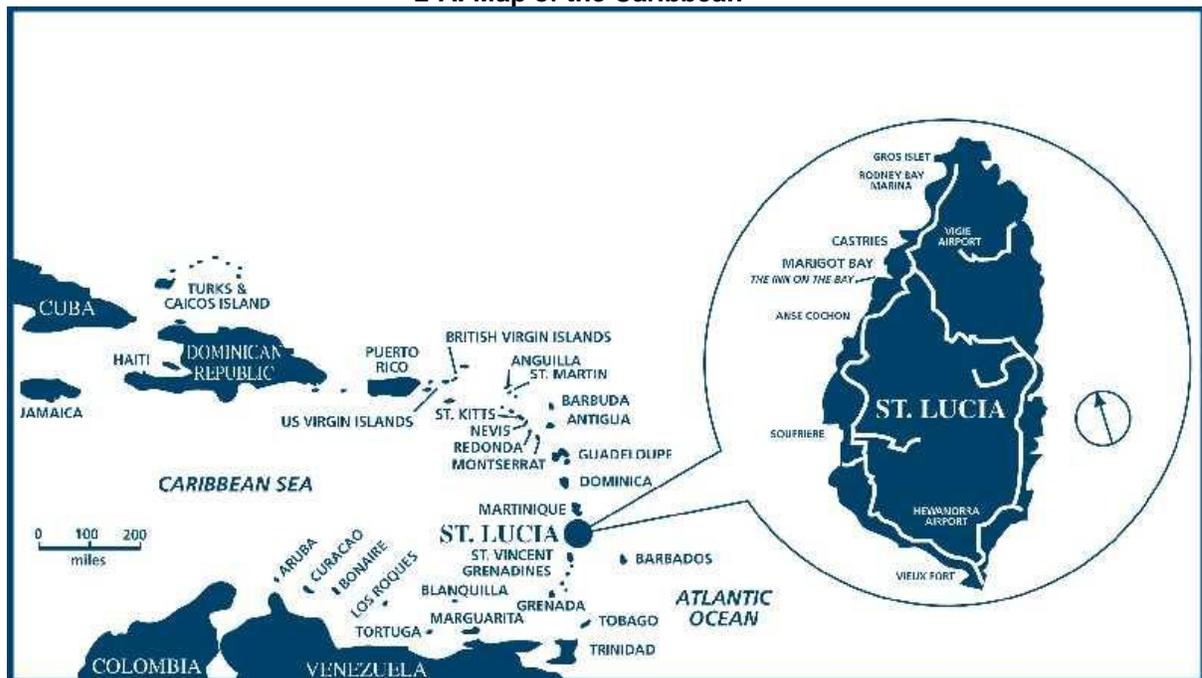
2 The Context of the Study: Saint Lucia

This section focuses on the small island developing state of Saint Lucia and provides a synopsis of the historical, economic, political, and social issues being faced. It also aims to provide a rich context for understanding the research topic.

2.1 Geography and Demography

The tropical island of Saint Lucia forms part of the Windward Islands of the Lesser Antilles, located midway down the Eastern Caribbean archipelago, between Martinique to the north, St. Vincent and the Grenadines to the south, and Barbados to the south east, (See Figure 2A) .

2-A: Map of the Caribbean



Source: GOOGLE search engine - Map of the Caribbean

Saint Lucia is approximately 616 square kilometres in area, and has an estimated population of 166,526 residents, according to the 2010 Population and Housing Census, (p. 4). Of volcanic origin, the island is very mountainous with very little flat land and with less than 5% of land suitable for agriculture (Wilkinson 2003). Due to the mountainous interior, most of the villages, towns, and capital city are situated along the coast and in the valleys, (Renard 2001).

An analysis of the geographical distribution of the population in 2009 revealed that the population remained heavily skewed towards the north west of the island. The two most populated districts, namely Gros-Islet and Castries, accounted for 13.1% and 40.9% of the population respectively, (St. Lucia Economic and Social Review 2009, p.50). Castries is the core of the capital city region of Saint Lucia, which is now generally referred to as the “north west urban corridor”, (Potter 2001, p.329). The southernmost point stretches to the Cul-de-Sac Bay, and the urban town of Gros-Islet to the north. Like many small island capitals, Castries is located on the edge of a natural west-east oriented harbour, with limited space due to the rising altitudes to the south, south-east and east, (Potter 2001). Despite its relatively small urban area, Castries shows all the features of much larger urban agglomerations; “...a central business district, central squatter areas and shanty towns, inner-city redevelopments and gentrification, ribbon developments, high-status residential enclaves, tourist- and leisure-based urbanization”, (Potter 2001, p.233). See Figure 2B.

2-B: Photograph Denoting the City of Castries



Source: Castries City Council official website, 2010. Retrieved on March 18th 2010, from:
<http://castriescitycouncil.org/>

2.2 Saint Lucia as a Small Island Developing State (SIDS)

The pervasiveness of international forces such as globalization and neo-liberalism in renegotiating the scales and spatial structuring of societies - the way in which they manifest locally - are subject to influence of the political geography of every nation-state. The political geography of a state produces nuanced and differential expressions of global changes, thus creating localized challenges for and opportunities to development. As such, it is imperative to understand the political geography of a place since it influences the way in which social and economic issues are dealt with.

The Small Island Developing States (SIDS) of the Caribbean such as Saint Lucia are typically low-lying, tropical countries that possess very similar inherent characteristics making them economically and ecologically vulnerable (UN 1994). Generally, they are small in size and population, insular, and susceptible to natural disasters, and most are considered Least Developing Countries. However, according to the World Bank classification, Saint Lucia is a lower-middle income country, with a GDP

per capita of EC \$11,830 (US\$4,354), (World Bank Country Profile 2011). Nevertheless, “scale has serious consequences for many aspects of life in small countries,” especially in terms of socio-economic and political viability and environmental vulnerability, (Baker 1992, p.1). The ecological conditions associated with a small geographical area are of vital importance for the economics of sustainable development. Due to the limited space, socio-economic activities of the people have an immediate impact on the fragile ecosystems and physical environment. The Caribbean region remains vulnerable to anthropogenic hazards such as climate change, soil and beach erosion, land degradation, loss of biodiversity, and land-, sea- and air-based pollution, (Buddan 2000, p. 4). Due to its climatic zone the region is also susceptible to natural disasters such as hurricanes, volcanic eruptions and earthquakes, which studies predict to become more severe as a result of climate change. Natural disasters are capable of devastating entire SIDS economies thus leaving their main industries – tourism and agriculture – particularly vulnerable, (Buddan 2000, p.5).

Some of the socio-economic characteristics that are consequences of a small geographical size are: 1. an economy that is very specialized and dependent on one or two major commodities (usually agriculture and tourism) due to the narrow range of resources conferred upon them by their small physical area (Buddan 2000); 2. a heavy reliance on international trade for imports, and export revenue volatility due to primary commodity dependence, (John 2010, p.51); 3. a small industrial base that is less able to supply jobs for the range of skills that are available and so SIDS experience increased migration of skilled nationals, creating a ‘brain drain’ which leads to a situation of dependence on remittances and development assistance from both bilateral and multilateral sources, (UN 1994).

Some of the political features of SIDS include: 1. small polities with a narrow range of public institutions and government services due to limited resources. The lack of economies of scale means providing certain services and infrastructure may not be economical, (Buddan 2000, p.6). Another characteristic of small polities is the tendency towards informal political processes due to the greater opportunities for face-to-face interactions between parliamentary representatives and their constituents. According to Buddan, “formal rules of administrative procedure can easily be by-passed leading to weak accountability to rules and application of regulations. This causes controversies over such matters as the award of contracts and personal favours through patronage”, (2000, p.7). This causes serious concerns for good governance, accountability and transparency, as well as viable frameworks for citizen participation in political processes.

Under these conditions, SIDS' face a major task in devising integrated sectoral and national strategies to attain sustainable development without being trapped into dependency. It is imperative to have a comprehensive understanding of the complexities of SIDS so as to situate the issues being addressed by the research topic within a SIDS - national, regional and global context.

Historically, regional integration and international cooperation has characterized the development of the Caribbean region to address the serious challenges to the economic and social stability of the Islands in a rapidly changing political and economic environment. It has been embraced as paramount in ensuring the political and economic success, and social development of each country. The attempt at two Federations during the 1950s speaks directly to this endeavour. In many ways the end of the Federation meant the beginning of more serious efforts on the part of the political leaders in the Caribbean to strengthen the ties between the islands by providing for the continuance and strengthening of the areas of cooperation that existed during the

Federation. To this end 1962 saw the formation of the Caribbean Community, the Caribbean Free Trade Association (CARIFTA) agreement which came into effect in 1968, the establishment of the Caribbean Development Bank (CDB) in 1969, and the transformation of the CARIFTA into the Common Market which established the Caribbean Community and Common Market (CARICOM) in 1972, the East Caribbean Common Market (ECCM) established in 1968, and the Organization of Eastern Caribbean States (OECS) founded in 1981, (U.S State Department 2010).

The OECS provides a prime example of regional cooperation among the island states with the establishment of the an OECS Solid and Ship-generated Waste Management Project in 1996, developed after its member states recognized the need to improve solid waste management systems in the region, (OECS Natural Resources Management Authority 2002). This prompted the Saint Lucian Government to establish the St. Lucia Solid Waste Management Authority by Parliament under Act number 20 in 1996 (SLSWMA official website, 2007). Since its inception the Authority has been responsible for island-wide waste collection and disposal and the management of the country's landfills, as well as educating the public in proper waste management practices.

International cooperation has also characterized the development of the Caribbean region. Many agencies within Government in Saint Lucia receive external funding from various international organizations. For example, the St. Lucia Social Development Fund (SSDF), the primary poverty reduction agency in the country, receives funding from the European Union as one of its donors. Similarly, the Organization of American States funded the establishment of After-school programmes in several Saint Lucian communities through the Community Services Unit of the Ministry of Social Transformation, Local Government and Community Empowerment. To

many developed countries this may seem like a clientilistic relationship, however, for SIDS such as Saint Lucia with limited resources, it is considered a necessary partnership for the development of the island.

2.3 The Government of Saint Lucia

Many European colonial powers attempted to colonize Saint Lucia since its discovery in the early 1500s; however, this was not successfully done until 1815 when the French ceded the island to the British. In 1838, Saint Lucia was incorporated into the British Windward Islands administration, headquartered in Barbados, until 1885, when the capital was moved to Grenada, (U.S State Department 2010). By the late nineteenth and early twentieth century a series of global economic and political events ushered in an era of increased self-governance for Saint Lucia. According to Harmsen et al.,

a sudden economic crisis (1884) followed by decades of deep poverty, a West Indian Royal Commission of Enquiry (1897), World War I (1914-1918)...a tragic pattern that repeated itself when the Great Depression of the 1930s dragged Saint Lucia back into the hole of poverty...strikes and riots led to another West Indian Royal Commission (1938), followed by the Second World War (1939-1945), led to a Saint Lucia profoundly changed, (2012, p.252).

Given the economic hardships which plagued the island, and the poor living conditions of the working class, there was increasing frustration with the lack of consideration that the current plantation economy held for the well-being of the people. With an absence of constitutional mechanisms such as organized trade unions to redress workers' grievances, labourers became increasingly militant and it the local and colonial authorities soon realized that the old "shoot a few hundred" remedy for quelling disorders was no longer valid, (Harmsen et al. 2012, p.260).

As a result, a collaborative attitude was cultivated among colonial authorities and the merging working class leaders. By 1939 the first trade unions were established the political awakening of the working and middle class people alike was finally underway. In

1951 universal adult suffrage was introduced to all, without the property, income, and literacy qualifications and new electoral districts were added; and by 1956 a Ministerial government was introduced, (U.S State Department 2010). In 1958 Saint Lucia joined the short-lived West Indies Federation, a semi-autonomous dependency of the United Kingdom. However, the Federation collapsed in 1962, following Jamaica's withdrawal, and a smaller federation was briefly attempted. After the second failure, the United Kingdom and the six Windward and Leeward islands - Grenada, St. Vincent, Dominica, Antigua, St. Kitts & Nevis, and Saint Lucia - developed a novel form of cooperation called associated statehood, (Harmsen et al. 2012, p.313).

As the movement towards independence was well underway, two political parties emerged vying to bring the island into independence, the St. Lucia Labour Party (SLP) born in 1950, and the United Workers Party born in 1964. In transitioning from associated statehood to independence, there was much friction between Britain and the islands, and among the political parties within them. Britain was ready to end her colonial relationship with the Caribbean, without providing any economic support and development before independence, (Harmsen et al. 2010, p.313). In the end, Saint Lucia and other Caribbean, African and Pacific countries were able to negotiate long-term guarantees for trade by securing markets for their exports, under the Lomé Convention signed in 1975 with the European Union, (John 2010, p.9). The European Development Fund was also established to disseminate financial aid for development as well as to compensate for market fluctuations impacting agricultural and mineral products from the ACP countries, (John 2010, p.9). On February 22nd, 1979 Saint Lucia gained its independence from Britain.

Saint Lucia subscribes to the Westminster style of parliamentary democracy. Power resides with the Prime Minister and the cabinet which usually represents the

parliamentary majority, (U.S. Department of State 2010). From Independence until 1997, the United Workers Party dominated island politics with the exception of a three years time span when the St. Lucia Labour Party came into power. However, increasing dissatisfaction with the UWP, plagued with scandals, led to a landslide victory by the SLP in 1997. The SLP remained in power until the 2006 elections when they lost to the newly revamped UWP, (Harmsen et. al 2012).

The island is divided into 17 electoral constituencies, each represented by a district representative in parliament. The bicameral parliament consists of a 17-member House of Assembly whose members are elected for five year terms, and an 11-member senate appointed by the governor general, (U.S. State Department 2010). There are approximately thirteen ministerial portfolios which are the responsibility of the majority party. That is, elected and non-elected (senators) members of the majority party will be appointed to a Ministry. For example, as of the November 28th, 2011 general elections, the ruling UWP lost to the SLP with six to eleven seats in the House of Assembly respectively. All eleven elected district representatives were appointed to a Ministry, while two Senators from the same party were appointed as well to fill the remaining posts, (Government of Saint Lucia official website, 2011).

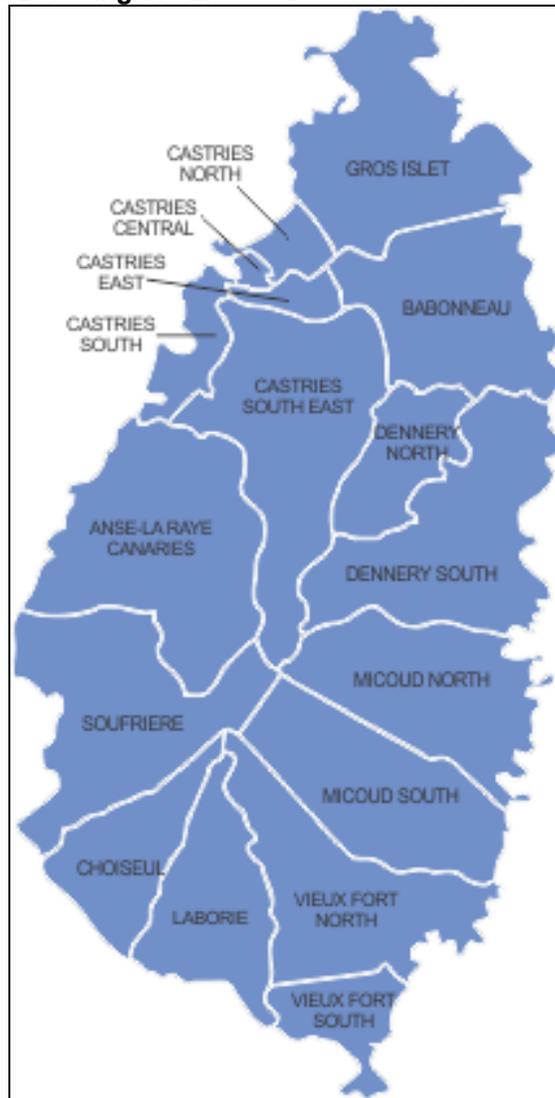
In terms of division of powers Saint Lucia is in a rather peculiar situation because there is no division of power between the national and local bodies of government. The island is divided into ten administrative districts, outfitted with one City, three Town and six Village Councils, which serve as pseudo local government instruments. See Appendix H-2. That is, members of the City, Towns and Village Councils are selected by the district representatives, and the list is given to the Governor General who formally appoints them, (Ragoonath 2009, p.33). Although several complimentary instruments designed to facilitate local government exists, there is no single local government policy

instrument. As such, local government activities are governed by statute, and by a number of administrative arrangements directed through the Ministry of Social Transformation, Local Government, and Community Empowerment, (A Proposal for Local Government Reform 2004, p.13). In addition, the Councils' responsibilities or traditional functions have focused primarily on physical infrastructure, regulation of sanitation services, land-use planning and development control etc. thereby remaining completely divorced from engaging in the social development of the communities, (A Proposal for Local Government Reform 2004). The end result has been the diminished capacity of the citizenry to effectively participate in the 'self-government' and sustainable development of their communities.

As such, the social development of communities has fallen under the purview of the Community Services Unit in the Ministry of Social Transformation, Local Government and Community Empowerment. See Appendix H-3 for Organizational Structure. Each electoral constituency is supposed to have a Social Transformation Officer (STO) who oversees the implementation of policy in the administration of public affairs in their respective localities. They also act as a liaison between the communities, civil society, and the government, as well as quasi-project officers when new programmes and projects etc. are being introduced into the community, (Joseph, personal communication 2011, p.2). The STOs also work closely with the Development Committees in each community, although not very Committee necessarily functions; many are defunct or moribund. Currently, there are only eleven STOs due to inadequate financial resources, and some of these STOs serve two electoral constituencies. However, the large geographic expanses which these constituencies cover undoubtedly over-extends the capabilities of the Officers to make a real impact in the various communities, (Joseph, personal communication 2011, p.4). See Map 2B below.

Given these short-comings with the present system, there have been calls for reform to the local government system with some success given the existence of Green and White Papers for local government reform. However, decentralization is a very politically sensitive subject, as the central government feels threatened by the idea of giving up some of its power for participatory democracy and citizen involvement in community governance, (Ragoonath 2009). As such, past and present governments have stalled any actual reform thus far.

2-C: Map Denoting the Electoral Constituencies of Saint Lucia



Source: Saint Lucia Electoral Department official website. Retrieved on October 9th, 2010 from:

<http://www.electoral.gov.lc/>

2.4 Economy of Saint Lucia

The banana industry has been the predominant industry and revenue generator for the island of Saint Lucia since the early 1900s, providing close to 60% of export earnings and a third of all employment on the island at its peak, (The Economist 1998). Banana revenues helped fund the country's development since the 1960s, benefitting all sectors of the economy from infrastructure improvements in roads, communications, water supply, sewerage and port facilities, (U.S Department of State 2010). Such prosperity was due to the advantageous terms and conditions negotiated between Saint Lucia and Britain to ensure market access for their agricultural primaries, predominantly bananas through the 1975 Banana Protocols of the Lomé Convention.

However, by the early 1990s, a series of international political and economic changes (the formation of European Single Market and the World Trade Organization) to expedite trade liberalization led to the precipitous decline of Saint Lucia's banana industry, while the simultaneous shrinking of the modest export-oriented light manufacturing and assembly sector created severe unemployment, (Kairi Consultants 2006). Residents of Saint Lucia's rural communities whose employment came from working on the banana farms were hardest hit, many spiraling into poverty, (Kairi Consultants 2006, p. 47).

In the wake of Saint Lucia's economic structural difficulty, many households once part of the lucrative "banana belt" fell into poverty as they lost their main livelihood (Thomas et al. 2002, p.9). As such, young people in particular left their rural communities in search of employment, and a hope for a better quality of life in the towns

and city. This increase in the population in urban areas has placed a strain on the availability of housing and social services and, as a consequence, contributed to rising levels of urban poverty, (Kairi Consultants 2006, p.31). Between 1995 and 2005, the proportion of urban poor in Castries proper increased by 11%, (Kari Consultants 2006).

Today, mass tourism has established itself as the most important sector within the Saint Lucian economy, contributing to 48% of the GDP and providing over 12000 tourism-related jobs (U.S. Department of State 2010). In 2008, the Government's efforts to stimulate demand for travel to Saint Lucia led to a 2.2% growth in the sector. However, given its susceptibility to external shocks like natural disasters, global economic recessions etc. the island remains economically vulnerable. For example, the recessionary global environment in 2009 influenced the fall of economic activity and a contraction in GDP by 5.2%; hotel occupancy declined to 53%. The highly discounted rates on hotel rooms led to a loss of \$1.1 billion in overnight tourist expenditures, (St. Lucia Economic and Social Review 2009, p.9). Although the tourism industry has rebounded from these shocks and contributed much to the development of the island as one of only a few development options for such SIDS, it remains highly volatile and how it is planned and managed will have important implications for the achievement of sustainable development for Saint Lucia.

2.5 Tourism in Saint Lucia

Despite the overall decline in the tourism sector in Saint Lucia, as noted in above (section 2.4, p. 20), cruise arrivals grew by 12.9%, and total visitor arrivals expanded by 7.1% to 1,014,761, reaching the million mark for the first time in 2008-2009, (St. Lucia Economic and Social Review 2009, p. 19). The most significant change in the Saint

Lucian tourism sector has been this massive increase in the number of cruise ships arriving in Saint Lucia. This has had serious implications for the development of Castries City, given its location on the harbour's edge. With the sudden influx of hundreds of tourists descending on the city per day, there has been "talk" towards the relocation of slum areas such as Faux-a-Chaud nestled near the City centre for the re-development of the city into a duty-free, commercial shopping area, and the establishment of Port Castries as a homeport for cruise ships, (Saint Lucia National Visions Plan 2008, p.14). This was most recently noted in the 2008 Saint Lucia National Vision Plan commissioned by the Government of Saint Lucia.

The current growth trajectory of Saint Lucia's tourism industry, is one towards the mass-market model of tourism. This is characterised by: high density and high levels of tourist penetration; little local involvement and participation; high levels of foreign owned and controlled tour and cruise operators, airlines, and transnational hotel chains; degraded and polluted natural resources, and loss of biodiversity; increased social tensions; land-use conflicts; and the breached capacity of these regions to provide basic necessities such as potable water for locals and visitors, and processing waste, (De Albuquerque and Mc Elroy 1992). While the short-term benefits include much needed foreign exchange earnings and employment opportunities for the people, the foreign-dominated structure denotes the "colonial tradition of high-volume, low-value added mono-cultural exports" influencing island governments to favour and facilitate this form of economic revenue through tax incentives (McElroy, 2004; John 2010, p.65). Though the cost-benefit analysis of the tourism industry is still unclear, "certain institutional and operational characteristics of the industry constrain its contributions to indigenously defined economic and social development", (Britton 1978, p. 6).

Despite attempts to reconcile the environmental and social components with the economic viability of the sector, the present day tourism industry has moved towards the unsustainable mass-market model with the resultant environmental degradation, unresolved social issues (rising poverty levels, unskilled and uneducated labour force) and economic vulnerability, (John 2010).

2.6 Poverty in Saint Lucia

In 1979, the Caribbean Development Bank launched the Basic Needs Trust Fund (BNTF) to address poverty among its borrowing member countries (BMC) of Saint Lucia, the Commonwealth of Dominica, Montserrat, Jamaica and 6 other regional member countries. The Fund receives funding from the United States Agency for International Development (USAID) and the Canadian International Development Agency (CIDA). The focus of the Fund was mainly on infrastructural projects such as building roads, and improving access to water and sanitation services. In 1996, the publication of the Saint Lucia Country Poverty Assessment Report revealed a poverty rate of over 20%, thus placing poverty reduction and alleviation at the forefront of the political agenda, (Kari Consultants 2006). Moreover, with the establishment of the MDGs, the Saint Lucian government was prompted to revamp their focus on poverty reduction, which ultimately led to the establishment of the Poverty Reduction Fund (PRF) by an Act of Parliament in 1998. The PRF fell under the purview of the Ministry of Social Transformation but operated side by side with the BNTF. In 2006, the PRF and the BNTF were amalgamated in order to reduce inefficiencies due to the duplication of efforts and resources, and streamline the poverty reduction strategies, (Kairi Consultants 2006).

As a result, the Saint Lucia Social Development Fund (SSDF) was created by the Saint Lucian Government as the primary poverty reduction agency, funded by the national government, and regional international organizations such as the Caribbean Development Bank and the European Union. This new Fund attempted to move away from the traditional econometric measures of poverty, and infrastructural projects and address poverty through a more holistic approach to development that supports sustainable asset building and livelihood strategies of communities. It also aimed to encourage participatory methods of implementation for a more socially inclusive development process.

Nevertheless, certain economic measures of poverty, such as the poverty line remain salient indicators of poverty. The poverty line, which is a measure of the minimum spent per adult in order to meet basic food and non-food needs, provides a quantitative and comparative measure of one's level of deprivation, (Kairi Consultants 2006). For Saint Lucia, the poverty line was estimated at EC\$13.93 (US\$ 5.22) daily, EC\$ 423.83 (US\$ 158.74) monthly or EC\$ 5,086 (US\$ 1,904.87) per annum. (Kari Consultants 2006, p.16). Although independently the poverty line does not address the totality of deprivation, it nevertheless provides valuable insight for comparative purposes. The results of the Saint Lucia Country Poverty Assessment Report 2005 show that poverty, as measured by the headcount, increased from 25.1% in 1995 to 28.8% in 2005, and as measured by population increased from 18.1% in 1995 to 21.4% in 2005 island-wide, (Kari Consultants 2006, p.16).

The Saint Lucian labour force is made of 67,703 persons, however 20.6% are unemployed, (2010 Population and Housing Census Preliminary Report, 2011, p.71). As such, it is no surprise that lack of income and employment have been recognized as core causes of poverty. Even salaried workers in the major industries in Saint Lucia earn

relatively low monthly salaries that range from approximately EC \$820 (USD \$304) per month in the wholesale and retail industry while workers in the gas, water supply, electricity and construction industries earn approximately EC\$1820 (USD \$674) per month, (Saint Lucia Government Statistics 2003).. Wage earners in tourism (hotel and restaurants) manufacturing, education, health and social work earn roughly \$1000 (USD \$370) a month, (Saint Lucia Government Statistics 2003). The President of the St. Lucia Chamber of Commerce, Chester Hinkson, criticized wages in Saint Lucia as being insufficient to allow individuals to maintain a decent standard of living and was quoted as saying during his first speech as president: “We cannot pay workers EC \$200 or \$250 (CAD \$75 to \$95) per fortnight when they spend 50 to 60 percent on transport cost. It is economically prudent to establish a minimum wage system where we pay a fair wage in keeping with inflation and cost of living”, (John 2010, p.15).

To further compound the obstacles faced by the poor, the high levels of unemployment and underemployment have led to the growth of the informal sector and to a reliance on seasonal and low level work. According to the 2005/06 St. Lucia Country Poverty Assessment, “young men alluded to having to ‘hustle’ and do odd jobs, including car washing and running errands and some young women alluded to participating in the sex trade”, (Kari Consultants 2006, p.25). Moreover, the drug culture appears to have become fully institutionalized in many communities and is seen as an important source for economic gain. The majority of the communities reported an increase in underground or illegal activities including crime, gambling, drug and sex trafficking and saw these as a way to generate income, (Kari Consultants 2006, p.25)

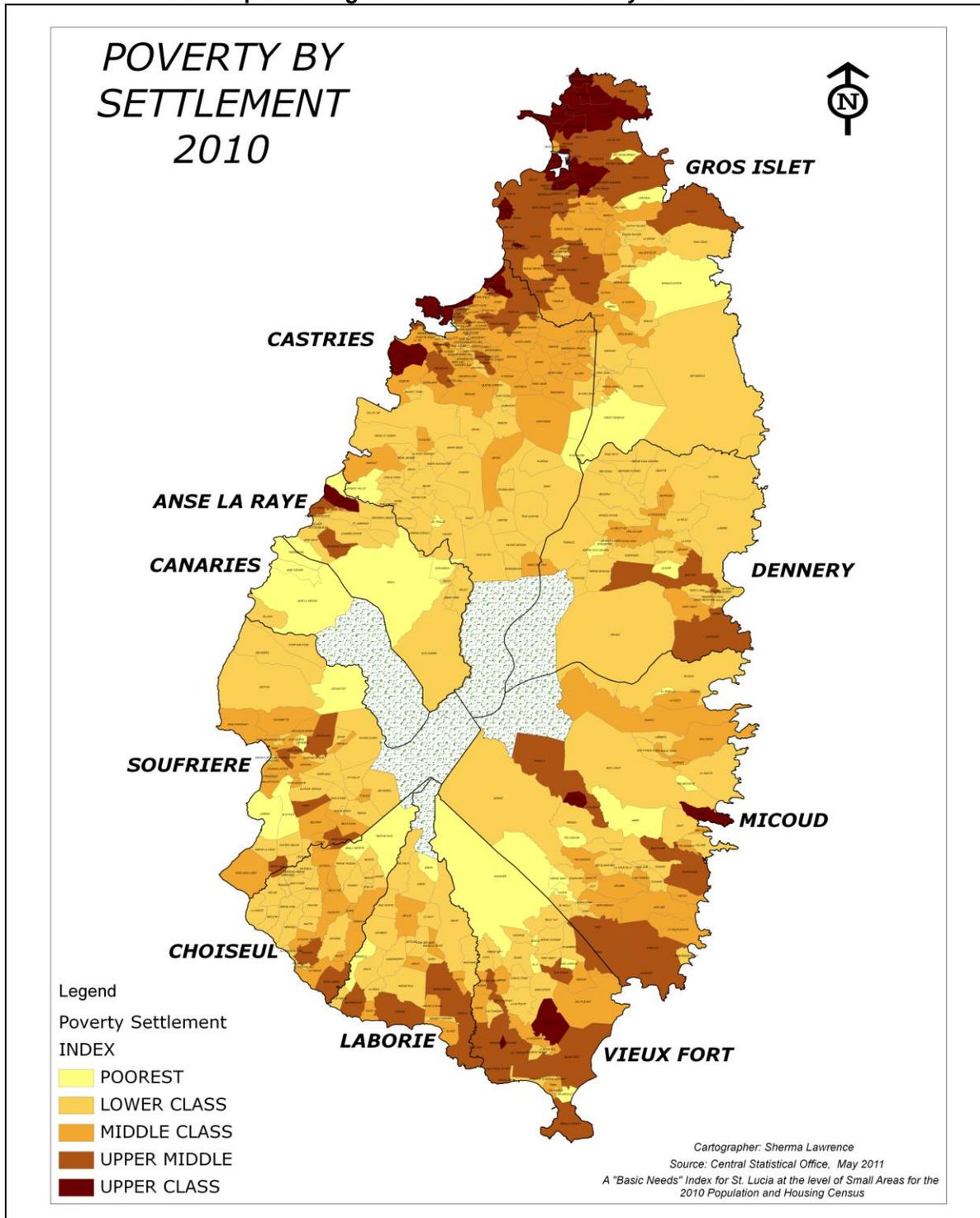
With regards to housing conditions, many poor community residents attested to deplorable housing with many families living in small wooden houses with limited room. Many of the homes were physically falling apart and lacked basic amenities such as

indoor pipes, kitchens, toilets and bathrooms. Although a significant number of the poorest households interviewed did have pit latrines, several of the households disposed of human excreta in the surrounding environment, (Kari Consultants 2006, p.27).

Poverty data is very useful and necessary because it enables the Saint Lucian Government, regional entities like the Caribbean Development Bank, and international organizations such as the United Nations to: identify poor people and keep their plight on the political agenda; enable targeted and appropriate interventions; monitor and evaluate projects and policy interventions; and evaluate the effectiveness of institutions such as the SSDF whose goal is to help poor people. Yet, it fails to capture the totality of experiences of poverty due to its various expressions

The geographic distribution of poverty has been identified as a predominantly rural phenomenon as predominantly rural districts such as Anse-la-Raye (44.9%), Soufriere (42.4%), Choiseul (38.4%), Laborie (42.1%) and Micoud (43.6%) have exhibited exorbitant rates for poverty in excess of 35%. See Figure 2D Below. However, together, the population of these five districts alone ranges from 7,190 to 18,071, and represent one third or 35.8% of the island's total population. (Kari Consultants 2006, p.17). In contrast, the district of Castries – home to one of the most urban centres on the island – represents 40% (67,594) of the island's population with a poverty rate of 22.2% or 15,005 persons, (Kari Consultants 2006, p.17). In addition, the district of Gros-Islet is considered a predominantly urban district which has also experienced a 20% population increase between 2001 and 2010, (2010 Housing and Population Census). The continuous flight of persons from poor rural communities to the city (the rural-urban drift) not only changes the geography of poverty but has serious complications and implications for tackling and reducing poverty, (Rajack et al. 2004).

2-D: Map Denoting the Distribution of Poverty in Saint Lucia



Currently, the city and suburbs of Castries together accounted for 22,111 persons or one-third of the district of Castries' estimated population, (2010 Saint Lucia

Population and Housing Census). In addition, the north-western district of Gros-Islet experienced a 20.8% increase in the enumerated population from 2001 to 2010. And, when comparing the ten year period 1991 to 2001 versus 2001 to 2010, although the migration of people toward the north slowed somewhat, the rural to urban movement has continued with Vieux-Fort and Soufriere recording above average increases in population size at 10.4% and 10.7% respectively, (2010 Saint Lucia Population and Housing Census, 2011, p.8). See Table 2A below.

2-A: Census Data Denoting the Population Change in the Districts from 2001 to 2010

District	Estimate Pop. 2001	Estimated Pop. 2010	Population Change
Total Castries	61,341	65,656	4,315
Castries City	10,634	4,173	-6461
Castries suburban	27,329	17,938	-9391
Castries rural	23,377	43,545	20,168
Gros-Islet	19,816	25,210	5,394
Vieux-Fort	16,329	16,284	-45
Soufriere	7,328	8,472	1,144
Anse-la-Raye	6,495	6,247	-248
Canaries	1,906	2,044	138
Choiseul	6,372	6,098	-274
Laborie	7,978	6,701	-1,277
Micoud	17,153	16,284	-869
Dennerly	12,773	12,599	-174
Saint Lucia (total)	157,490	165,595	8,105

Source: Saint Lucia Government Statistics Department official website. The 2001 and the 2010 Saint Lucia Population and Housing Census Preliminary Report. Retrieved on August 10th, 2010 from: <http://www.stats.gov.lc/>.

According to the UN-HABITAT Country Profile statistical overview, Saint Lucia has an urban population of 38% or 62,926 people, of which 12% or 7,551 people live in slum conditions. Moreover, the urban and slum populations are stated to be rising by 1% each year, (UN-Habitat official website, 2001). It should be noted that these numbers are likely under-estimates, and do not precisely represent the levels of urban poverty and slum growth. According to a statistician in the Demography section at the Saint Lucia Statistics Department, the current percentage of persons living in urban areas is

approximately in the sixties percentile (Personal communication, 2012, p.1). However, they noted that there were no official working definitions of 'urban' areas, thus little data had been collected on such divisions of urban and rural.

Nevertheless, the community of Faux-a-Chaud is considered a slum, an unplanned settlement in the district of Castries, to which persons have migrated over the years in search of employment. At first glance, the Census data appears to corroborate the growing slum population, denoting that between 2001 and 2010 there was an increase in the enumerated population from 261 to 330 (69 persons), (Saint Lucia Statistics Department official website 2011). However, further inspection reveals that in the 2001 Census, the community of Faux-a-Chaud is categorized under Castries City, yet in the 2010 Census it is found under the suburban Castries category. This change indicates a change in boundaries and therefore part of the population increase may be attributed to such. Moreover, there is no differentiation between a population increases due to births in the community versus in-migration. There is limited data collected at the community level by the Census to shed further light on this issue.

2.7 The Community of Faux-a-Chaud

The community of Faux-a-Chaud is an urban poor area located within the Castries suburban sub-division of the district of Castries, and the electoral constituency of Castries South. See Figure 2E below.

2-E: Aerial Image of Castries City and the Community of Faux-a-Chaud



Source: Ministry of Physical Development, Housing and Urban Renewal, Department of Planning. The Greaham Louisy Administrative Building Waterfront, Castries, Saint Lucia.

Faux-a-Chaud is an unplanned, squatter community, populated by persons who migrated into the city in search of employment and other opportunities in the early 1990s, (Jean, personal communication, 2011). The community consists of 134 households with a total population of 330 residents, and an average household size of 3.9 persons, (Saint Lucia Government Statistics Department official website 2011). For the majority of persons who make some kind of income, their gross pay falls between EC \$400 (USD\$114.15) and EC\$1999 (USD\$740.37) a month, (2010 Population and Housing Census Results 2011). The community consists of dwellings erected illegally on Crown lands. Most homes are constituted predominantly of wooden walls and galvanized roofs (sheet metal of aluminium and zinc) - characteristic of low-income housing, (2010 Population and Housing Census Results, 2011). In terms of public facilities, there is a laundry facility and bathrooms, as well as a newly renovated community centre equipped with a computer lab. See figure 2F.

2-F: Photograph Denoting the Community of Faux-a-Chaud



Source: Photograph taken by Laurah John on June 10th, 2011.

The Saint Lucia Country Poverty Assessment Report 2005/06 identifies Faux-a-Chaud as an urban poor community, and as described in section 2.6, it denotes the prescribed characteristics of high unemployment, overcrowding, inadequate basic services and facilities, particularly solid waste management. As such, residents are exposed to numerous environmental hazards such as, unsanitary living conditions, exposure to disease vector, and threat of injury due to poor quality of the housing structures and materials, all of which are serious problems for the community. In addition to the degrading physical environment, residents feel that opportunities are limited due to the negative stigma attached to particular urban communities like Faux-a-

Chaud, which is seen as a haven for criminals and other delinquent behaviour, (Kari Consultants 2006, p.24).

Because of its marginalized status a former STO to the community felt that a Development Committee should be established in the community. As noted in section 2.3, every community in Saint Lucia is entitled to a Development Committee, with ties to a Social Transformation Officer in the Community Services Unit. However, one had never been formally established in the community of FAC. As such, the STO invited specific individuals from the community to be a part of the Committee. There was no election process within the community and unfortunately this has become the tradition. Nevertheless, the Committee was charged with the responsibility to: act as an agent to Ministry; to help facilitate community activities and projects; to collect data on various issues; to set up disaster mitigation plan; to organize sporting and cultural activities; to manage the Community Centre and IT Lab; and to provide a channel through which residents could voice their concerns, needs etc. regarding the community, (King, personal communication 2012). The Committee was active until 2009. As such, there is a lack of representation and avenues for community residents to participate in the development of their community.

2.8 St. Lucia Solid Waste Management Authority (SLSWMA)

Coupled with rapid urbanization, an ever growing tourism industry and rise in urban poverty, has come the consumption of more packaged products, which has led to a higher percentage of inorganic materials – metals, glass, plastic, textiles etc. – entering the waste stream, (SLSWMA Annual Report 2008-2009). As such, the composition of the waste between 2002 and 2008 saw a reduction in the amount of organic material, from 58% to 45% of the total waste, and an increase in plastics from 13% to 22%, (SLSWMA Annual Report 2008-2009, p.50). As a result, waste products which do not break down easily and which are harmful to the environment have increased to the point where significant problems such as flooding due to plastic waste

blocking drains etc. have become particularly frequent experiences in urban areas, (UNEP 2004, p. 10). The figures above clearly denote the changing consumption patterns of the population towards more packaged goods given the island's increasing dependence on food importation to support a growing tourism industry. As such the problem is two-fold; the solid waste disposal mechanism particularly in the urban, tourist-centered area of Castries is insufficient to adequately deal with the amount of garbage being produced by the masses of tourists who descend on this areas on a daily basis. In addition, the availability of cheap, inorganic packaged goods to the general public, who are less conscious of proper waste disposal methods, are more likely to litter and thus inundate the waste management system.

2.8.1. History of SLSWMA

Prior to 1996, the portfolio of solid waste in Saint Lucia fell within the purview of what was then the Ministry of Community Development, Local Governments and Cooperatives and responsibilities delegated to the towns and village councils under the overall supervision of the Ministry of Health, (SLSWMA 2003). Collection services were undertaken by Town and Village Councils, and were confined to the boundaries of the respective towns and villages. Less than 50% of the island received collection service thus resulting in widespread dumping of waste into waterways, as well as the proliferation of illegal dumps. However, the waste that was collected was brought to one of six open dump sites around the island, in the communities of Ciceron, Micoud, Dennery, Anse La Raye, Choiseul, and Vieux-Fort, (SLSWMA 2003). These open dumps were simply expanses of land cleared for the dumping of garbage. They were poorly managed and monitored by the government with no environmental controls, and the dump sites were characterized by: a lack of any official operational plan; inadequate provisions for health and safety; a lack of daily compaction and cover resulting in problems associated with windblown litter, dust, odours, pests and rodents; open burning of waste; and poor drainage resulting in the accumulation of stagnant water and the contamination of groundwater with leachate, (Environmental Resource Management 1998).

Facing similar experiences in solid waste collection and disposal by neighbouring Caribbean islands, the governments of the member states of the Organization of Eastern Caribbean States (OECS) - including Saint Lucia – recognized the need to improve solid waste management systems in the region and established the OECS Solid and Ship-generated Waste Management Project in 1996, (OECS Natural Resources Management Authority 2002). This project was divided into regional and national components, with the regional aspects being administered by the OECS Solid Waste Management Unit (PMU) headquartered in Saint Lucia, and the national aspects administered by the local solid waste management entities in the respective OECS. In Saint Lucia, this was the SLSWMA created by Parliament under Act number 20. The Act gave the Authority the mission to “enhance St. Lucia's environmental integrity and the health of her people through the provision and management of an integrated system for public education and awareness and for the collection, treatment, recycling and disposal of solid and hazardous waste management”, (SLSWMA official website 2007).

2.8.2. Operations of the SLSWMA

Since the inception of the SLSWMA, four of the six open dump sites have been closed and two areas - Vieux-Fort and Deglos - have been upgraded to sanitary landfills with minimal environmental impacts, (Environmental Resource Management 1998). All aspects of residential and commercial collection and disposal of solid waste were privatized in 1999, with private waste collection contractors servicing fourteen zones throughout the island. The zones serve a similar purpose to the ten administrative districts in Saint Lucia; they denote the boundaries within which the various private contractors are responsible for garbage collection, (De Romilly & De Romilly Ltd. 1999). Garbage is collected twice weekly except in the capital city of Castries and town of

Soufriere (the second most heavily trafficked town by tourists) where the garbage is collected daily, (SLSWMA Annual Report 2008-2009). In low resource, hillside communities and unplanned settlements where house to house collection is not possible due to limited access, the Authority has developed a collection system comprised of communal bins which are emptied on a bi-weekly. The collection of commercial waste does not fall within the legal mandate of SLSWMA. As such, commercial entities such as hotels, businesses etc. are to make provisions for collection and transportation of commercial waste through a licensed waste hauler or collect and transport the waste themselves to one of the sanitary landfills, (SLSWMA Annual Report 2008-2009).

2.8.3. Challenges

Despite the gains made in developing and implementing a formalized waste management system in Saint Lucia, responsibilities for solid waste management remain inefficient and fragmented. The management of drain cleaning and street sweepings remained under the purview of the Ministry of Social Transformation, administered through the Towns and Village Councils, while the Ministry of Communications, Works, Transport and Public Utilities administers a caretaker programme of road verges and drains, (Kairi Consultants 2006, p.159). Some of these services are administered by the SSDF under the Short-Term Employment Programme (STEP), which targets unemployed or seasonally employed persons who are then responsible for the clearing of debris and de-bushing areas, (Government of Saint Lucia official website 2010). Another governmental agency that has waste management responsibilities is the National Conservation Authority. This body is responsible for the maintenance and management of beaches, parks and green spaces, and administers a beach

maintenance programme for improving waste management at beaches around the island, (Government of Saint Lucia official website 2010).

Given the number of agencies that are involved in the waste management system, such fragmentation of services makes it difficult to monitor and coordinate services, which has resulted in the duplication of efforts and in some cases an absence of responsibility for some aspects of waste management. The variations in the quality of operations and capacity of each agency in fulfilling its mandate results in varying levels of quality of service offered to the public, leaving the most vulnerable groups such as the urban poor to fend for themselves.

With regard to waste minimization strategies such as recovery, recycling, and composting, there are presently no official plans to engage in such activities, (Jean, personal communication 2011, p.1). In fact, the SLSWMA does not have the jurisdiction to actually implement such initiatives, though it must set the standards and procedures for any other entity interested in taking up the cause, (Waste Management Act No. 4 of 2008). In this vein, the Authority has encouraged composting for fertilizer in household and school gardens. Although composting often gets left out in the resource recovery rhetoric, the researcher believes that food security is always an important issue particularly for SIDS, and as such community gardens and therefore composting should be encouraged. As such, developing a community garden and encouraging composting will be a part of the resource recovery programme that the research would like to see established.

3 Literature Review

This chapter presents the literature that frames the research question, “What is the feasibility of establishing a demonstration resource recovery programme in the urban poor community of Faux-a-Chaud, Saint Lucia?” It provides the conceptual framework for understanding how and why the topic was approached in the manner presented in this study. The first literature depicts sustainable development as it relates to sustainable community development and SIDS, and provides the conceptual underpinning for understanding the environmental limits and social repercussions to unbalanced economic development. It emphasizes the need to incorporate this knowledge into planning for the future, particularly in cities. The second literature looks at poverty from a global and local perspective, denoting the international changes in the understanding of poverty that have influenced changes in policy and practice for addressing poverty in Saint Lucia. It also examines the linkages between the environment and urban poverty denoting the environmental hazards and deprivation to which the urban poor are often exposed to and experience. It provides insight into the complexities and nuances of the plight of the urban poor and thus the multifaceted solutions required to address this issue. Finally, the third literature looks at resource recovery in developing countries, which largely occurs as part of the informal sector among the urban poor population. It also looks at the policy challenges to and benefits for formalizing this activity. Moreover, the researcher provides a detailed schema of her vision for the resource recovery programme for the community of Faux-a-Chaud and its implications for ‘poor’ community mobilization more generally.

3.1 Sustainable Development

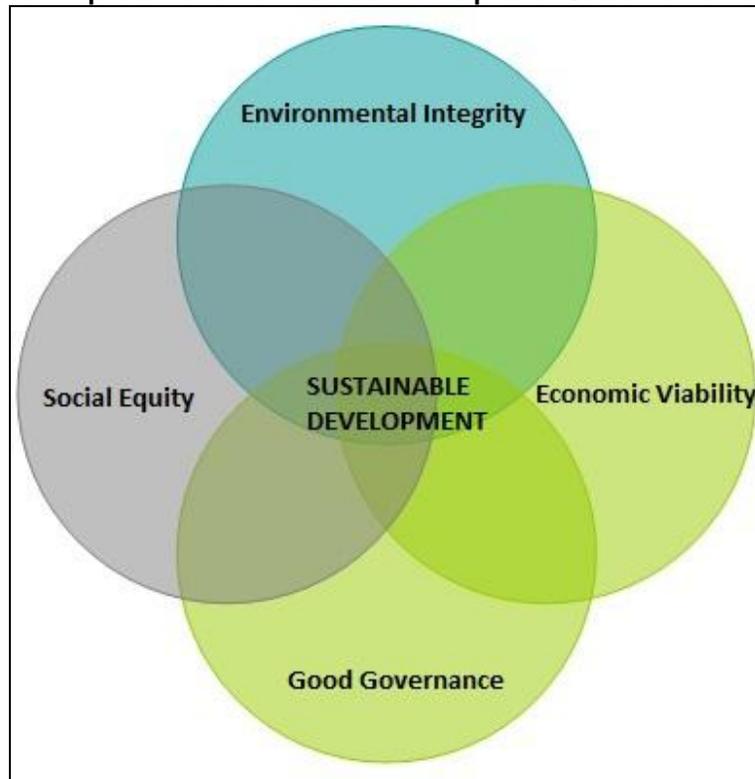
The term sustainable development became pervasive in environmental and development discourses after its appearance - and widespread acceptance - in the Brundtland Report, 1987. There was a recognition that economic growth alone was not solving the world’s problems, particularly poverty, and as such there needed to be a re-thinking of the way people lived and governed in terms of how resources were used. The Brundtland Commission defined sustainable development as, “development that meets the needs of current generations without compromising the ability of future

generations to meet their own needs”, (WCED 1987, p.43). The Report denoted a decisive shift in economic planning whereby environmental impacts were no longer an after-thought but now took centre stage in the political, decision-making process. As such, environmental concerns that gave priority to issues of ecological degradation were the cornerstone of sustainable development. However, according to Kadekodi (1992), as the concept matured there has been an increasing emphasis on its interconnectedness to social and economic dimensions of development. As such, embedded in the core of the traditional, mainstream model of sustainable development is “the tri-dimensional concept featuring the interface between environmental, economic, and social sustainability” (Bell, 2003; OECD 2001).

Nevertheless, recent studies have revealed that the path to sustainability needs to be tempered by new institutional behaviour beyond conventional economics, with an embedded process of governance as a new institutional culture, (Alipour 2011, p.32). It is argued that sustainable planning cannot be implemented unless institutions restructure their behaviours (i.e. the formal policy process) to be conducive to 'governance' as a prerequisite to the process of sustainable development. This is particularly pertinent for example, in developing countries where “the combination of a weak institutional structure and fractionalization within the governing elite (i.e., absence of governance) is correlated with slow growth and haphazard development”, (Alipour 2011, p.35). As cited by Alipour 2011, (p.35), according to Kaufmann and Kraay, “most scholars, policymakers, aid donors, and aid recipients recognize that good governance is a fundamental ingredient of sustained economic development”, (2008, p.1). As such, it is now generally agreed that sustainable development can only be achieved through a strengthening of democratic governance institutions and processes that provide the necessary framework for social and economic progress, and environmental

preservation. Therefore, the basic idea is that people, habitats, economic and political systems are inter-related, and considering only one of these at a time leads to errors in judgment and “unsustainable” outcomes. See Figure 3A below.

3-A: A Visual Representation of the Four Principles of Sustainable Development



Environmental sustainability realizes the limited capacity of the planet Earth to sustain human needs, and thus requires human activity to proceed in such a manner as to protect and preserve stocks of natural capital, while creating greater opportunities for human beings to improve their well-being, (Evans et al. 1998; Gibson et al. 2002). Reducing damage and degradation to ecological systems while improving the well-being of human beings by securing greater capital is an immense challenge that has a plethora of implications for other aspects of society including political and economic equity, technology, efficiency of energy and natural resources, human, and social capital (Gibson et al. 2002; Robinson 2004).

According to Munro, the economic dimension of sustainable development reflects “...the need to strike the balance between the costs and benefits of economic activity, within the confines of the carrying capacity of the environment...economic progress should not be made at the expense of intergenerational equity”, (1995). As such, resources should not be exhausted to the point that they are incapacitated in restoring themselves for future use. Moreover, the wealth produced through economic activity should enable persons to maintain a certain minimum standard of living, while enabling economies to maintain a competitive edge in the global market, with minimal ecological degradation. This may be done by focusing on developing sectors where one has a competitive advantage, while ensuring that it is planned and managed in an environmentally sound way. It may also be done by establishing a green economy and/or targeting markets that place a premium on goods and services produced in an equitable manner. It is a difficult balance to strike, though a necessary one. However, this can only be done if the public policy machinery responsible for the rules and regulations for developing and operating a sustainable plan for the development of the city is “designed and administered in open, transparent, and participatory ways to support the balance and coordinated effectiveness” of all four sustainable development domains, (Stewart and Kuska 2010, p.3)

Social sustainability or social equity speaks to both tangible and intangible needs. Based on Maslow’s hierarchy of human needs, tangible needs relate to the satisfaction of basic human needs within the society such as food, clothing, and shelter, (Nurse 2006, p.34). Intangible needs speak to maintenance of political and community values, such as ethics, value systems, language, education, work attitudes, class systems etc. that influence societal relations, (Nurse 2006, p.34). It also refers to political rights and representation that enable individuals to be active participants in the

development of their communities, and have a voice at the national level as well. Here one may denote the interrelated-ness of the social and political aspects of sustainability, as global ideas of sustainable development place particular emphasis on citizen participation and local communities, while moving policy-making away from centralized government strongholds, (Häikiö 2007, p.2149). In addition, the sustainability of social needs and values alludes to the quality of growth that occurs in the economy and equity in the distribution of resources; both of which are integral to social sustainability. Therefore, “economic and social development should be mutually reinforcing,” (WCED 1987, p.54).

Over the years it has become very clear that traditional, political processes are insufficient to deal with the increasingly dynamic and complex societal issues being faced at a global level, such as food security and the rising levels of urban poverty. Previously, an almost universal response was to look towards the market and its invisible hands to steer one out of such difficulties. Today however, States have begun to look at ‘civil society’ actors as serious governing partners, (Alipour 2011, p.34). The move towards good governance was set in motion under the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 (The Earth Summit), which placed an emphasis on the local level, “calling upon local communities to formulate action plans for sustainable development in collaboration with local stakeholders”, (United Nations, 1992, chapter 28). The idea of ‘governance’ as conceptualized for this study was extracted from Alipour 2011, (p.33), and is defined by Osborne and Gaebler:

Governance is the process by which we collectively solve problems and meet our society's needs - government is the instrument that we use. Governance encompasses not just government, but also the private sector and civil society (individuals and groups) and the systems, procedures and processes in place for planning, management and decision-making, (1993, p.24).

As such, governance differs from the traditional, hierarchic and bureaucratic, top-down model of governing by giving way to bottom-up processes that enable local citizens to achieve the required policy outcomes by pooling their resources and skills, and coordinating with other non-governmental entities, (Häikiö 2007, p.2148). According to Alipour, governance also assures that “corruption is minimized, the views of minorities are taken into account, and the voices of the most vulnerable in society are heard in decision-making,” (2011, p.35). Overall, good governance has been identified as a necessary shift in the decision-making environment (integration of formal and informal institutions) essential to achieving sustainability.

Sustainable development is only achievable if there is harmony and alignment between the objectives of democratic, public policy processes and that of social equity, environmental responsibility and economic viability. Thus, it has come to signify the interdependence and interconnectedness of core disciplines that must be addressed equally in pursuit of this concept.

3.1.1. Sustainable Community Development

As noted above, a pivotal part of sustainability is that development must also make sense in human terms and be assessed against its impact upon households. According to Roseland, “inherent in much of the literature is the recognition that communities must be involved in defining sustainability from a local perspective”, (1997, p.201). Sustainable community development, therefore, may be defined as development that integrates ecological, social, and economic and political decision making, and requires that members of the ‘community’ form a regularly interacting system of networks (Onyx et al., 2004). Community development strategies have been employed by national governments and international organizations such as the United Nations and

World Bank since the 1970s and '80s, however, by the 1990s, there was increasing criticism about the mixed success of "top-down" programmes. As a result, over the last fifteen years community development has denoted a new emphasis on community-led development coupled with the realization that local development depends on community empowerment. That is, community goals need to be self-identified and self-addressed. According to Wint, "this type of empowerment has been accompanied by both community and state accepting the need for re-interpretation of what are viable alternative economies", (2002, p.87).

The global economic system has placed pressures on communities through neo-classical economic development models that externalize costs of production while privatizing wealth, (Nurse 2006, p.35). As a result, there has been a decline in local economies, citizen control and local identity and cultural diversity, and an increase in environmental and social degradation (neglect of human needs), (Nurse 2006, p.35). The onset of an international sustainability agenda has led to the recognition that the aforementioned challenges have placed communities as the weak link in efforts to transform relations between the environment and the economy. Yet, they are also paradoxically in a position to become the catalysts for an economic paradigm shift – one that is holistic, open, and human in scale. According to Shultz' understanding of place-based economics,

By investing in one's community, tangible results can be felt and seen because they are directly connected to where that person lives. Place-based economics also serve as a catalyst for community self-sufficiency to provide for the needs of community members. Gandhi called this philosophy swaraj: 'a genuine attempt to regain control of the self-- our self-respect, self-responsibility, and capacities for self-realization -- from institutions of dehumanization, (2003).

In many developing countries, the models of social and economic development used rely heavily on political, social and psychological empowerment techniques being employed at the community level, in order to warrant any type of sustainability becoming

apparent, (Wint 2002, p. 86). As cited in Wint 2002, (p.89), Marcia Nozick presents a model approach to sustainable community development based on five components: economic self-reliance, ecological sustainability, community control in the decision-making process, meeting the needs of the individual, and building a community culture, (1993). This holistic strategy for sustainable development suggests that sustainable, socio-economic, community development necessarily be bound by the natural limits of the environment and maintain the natural balance between humanity and nature. It also encourages the development of “community will, unity of purpose and a collective consciousness”, and places the onus of development on the community and the individual within that community, (Wint 2002, p.89).

3.1.2. Challenges to Sustainable Development

Some critics such as Robinson (2004) state that the term “sustainable development” is too vague and is often obscured by conflicting world views. For example, governments and businesses have used sustainability terminology to promote ‘green washing’ and unsustainable activities due to its paradoxical nature that “nurtures fallacies such that by simply becoming more efficient, and increasing the well-being of all human-beings without exceeding the physical limits of the planet, is possible”, (John 2010, p.31). This apparent paradox has led to intense arguments and controversy surrounding the definition of sustainable development, polarizing various academics, groups, and institutions to one of two sides: proponents of weak sustainability or strong sustainability. Advocates of weak sustainability maintain that man-made capital can, in principle, replace all types of natural capital; that essentially every technology can be improved upon or replaced by innovation, and that there is a substitute for any and all scarce materials, such as clean air (John 2010, p.31). Proponents of strong

sustainability argue that the stock of natural resources and ecological functions are irreplaceable. As such, economic policy is deemed to have a fiduciary responsibility to the greater ecological world, (Hay 2002; John 2010, p.31). Whereas weak sustainability condones the domination of nature in the name of development and human welfare, the strong side believes in the intrinsic right of nature to exist and that it should not be endangered or depleted but rather maintained in order to ensure the future well being of coming generations, (Jabareen 2008; John 2010, p.31).

Another criticism is that mainstream notions of sustainable development co-opt rather than challenge, for example, neo-liberal economic hegemony, because it shares a similar foundational premise as hegemonic development approaches. That is, it still prioritizes capital accumulation through concepts like growth and efficiency, which remain part of the sustainable development discourse, (Lele 1991; Haque 1999). As such, economic growth and the environment remain separate spheres, and economic conceptions continue to dominate decision-making and thus development. So, although the sustainability paradigm is meant to challenge the limits of growth, there remains a high level of coherence with the core features of contemporary development thought and practice, which “prioritizes an image and vision of development scripted in the tenets of Western technological civilization that is often promoted as the ‘universal’ and the ‘obvious’”, (Nurse 2006, p.35). As cited by Nurse 2006, (p.35), Wallerstein (1991) argues that sustainable development is thus intricately linked to the “geo-cultural construct of development”, which legitimizes modern Western values and de-legitimizes alternative value systems that are not necessarily focused on the economic growth models of development. As a result, this constructs a global cultural asymmetry between the ‘West’ and the ‘Rest’, (Nurse 2006, p.38). The key point being made here is that the conceptual framework used determines what we see and how we act in the world. This

is an important concern particularly for sustainable development processes which take place beyond and even within this Western context, and denotes the need to maintain a culturally, geographically, and socially relevant understanding of sustainable development.

3.2 The Conceptual Framework of the Research Study

The historical, economic, social and political context of every country is unique, but the basic principles of sustainable development apply to all. As such, the four principles model was deemed an appropriate conceptual framework for this research project due to its adaptability within policy and planning processes. The model includes the ecological, social, economic and political dimensions of sustainable development. Although the interdependencies and interconnections of this model of sustainable development are not explicitly stated, they have been derived from the implications of the interconnected nature of environmental integrity, economic viability, social equity and good governing, and signify equality among all elements. It should be noted that sustainability initiatives are evolving processes, “that change and shift in focus as the values, relationships, and contexts in which the initiatives are situated, shift over time and place” (Connelly, 2010, p.15). Therefore, there is no single sustainability policy or solution that can be applied universally. Rather, it is a process of continuous improvement that aims to adapt to specific contexts and changing circumstances, (Slater 2010).

One of the most pertinent issues one faces in a developing country such as Saint Lucia is the attempt to fit into a cookie-cutter mould of city centres under the auspices of “development” as defined by the Developed world; an effort which has often led to the

transplantation of attitudes, policies and institutions which disregard the tradition, history, culture, attitudes and social dynamics of the people where it is expected to function. Given this background, the researcher has come to recognize the nexus between the principles and practices of sustainable planning (or lack thereof) and their effect on the developmental capacity of a people or society. As such, the idea for a test case resource recovery programme is an attempt at a planned sustainable development initiative based on the four core principles of sustainability mentioned above. Moreover, the project was designed in acknowledgement of the socio-cultural and economic history of the country, as well as its particularities as a small island developing state. It is imperative that the project is culturally and socially relevant for the country and more specifically the people whom it seeks to target.

3.3 Linking Poverty and the Environment

According to the World Bank, poverty is “pronounced deprivation in well-being,” (World Bank Group 2011). The conventional view links well-being primarily to command over commodities, so the poor are those who do not have enough income or consumption to put them above some adequate minimum threshold. Historically, this threshold has been USD\$1 a day, thereby measuring poverty largely in monetary terms, (Thomas & Wint 2002, p.3). The United Nations Millennium Development Goal one – to end poverty and hunger – aims in target 1A, to “halve, between 1990 and 2015, the proportion of people whose income is less than USD\$1 a day, (UN MDGs official website 2011). As such, the main focus is on whether households or individuals have enough resources (income) to meet their needs. Such a monetary threshold fails to acknowledge local realities, which may in fact render it void. For example, in a

developing country where the price of food is increasing without a corresponding rise in wages, living on USD\$5 a day may still leave persons poor or below the national poverty line. As such, the limitations of a strictly economic definition of poverty can be seen, and has been increasingly accepted by the international community.

Today, evolving sustainable development paradigms advocate for a path towards economic development that is tempered by respect for the socio-cultural contexts and environmental awareness in which societies are embedded, (Robinson 2004). As such, this shift away from the narrow economic focus of development can be denoted in the changing - and internationally accepted - definitions of phenomena such as poverty. In its broadest sense, the thinking on poverty (and development) has been most influenced by the seminal works of Amartya Sen. In his development of the Capability Approach, Sen argues that well-being comes from a capability to function in society, and this interpretation has emerged as a leading alternative to the standard economic frameworks for thinking about poverty, inequality and human development, (Clark 2006, p.2). Moreover, Sen interpreted development as “a process of expanding the real freedom that people enjoy...the removal of major sources of unfreedom, poverty, as well as tyranny, poor economic opportunities, systematic deprivation, and neglect of public facilities...”, (Sen 1999). Thus, poverty arises when people lack key capabilities, and so have inadequate incomes or education, or poor health, or insecurity, or low self-confidence, or a sense of powerlessness, or the absence of rights such as freedom of speech, (Stewart and Deneulin 2002, p.61). The capabilities approach not only changes the measurement focus in poverty assessments away from its traditional economic trajectories but also directs attention to social and economic constraints external to the poor individual or household. Viewed in this way, poverty is a multidimensional phenomenon and less amenable to simple solutions. Its influence can

be seen in the recent conceptual shifts suggesting a growing admission of qualitative implications of poverty, including access to basic services and the asset formation capabilities of the poor. By recognizing the multi-dimensional nature of poverty, global initiatives such as Agenda 21, the 1995 World Summit, and the 2000 MDGs emphasize the need for better **public** services such as waste management, coupled with measures to empower the poor, or insure them against risks, or to address specific weaknesses such as inadequate availability of schools or a corrupt health service - as key components of anti-poverty initiatives, (Rajack et al. 2004, p.8).

The environment can be defined in several different ways. Most commonly, when one speaks of the environment they are referring to the natural surroundings - the air, water, minerals, organisms and all other constituent parts of an ecosystem that may affect a given organism at any time. However, organisms such as human beings through their existence also have an impact on the natural environment. There are natural limits to ecological systems (carrying capacity) and where these limits are exceeded can lead to environmental degradation. Therefore, it is important to note that socially-differentiated people use and value elements/aspects of the environment in different ways, and may define differently what is meant by degradation (UWI-SEDU 2008, p.20). The environment may also refer to social and cultural influences and/or the physical or built landscape which shapes the way a person lives. The relationship between poverty and the environment seeks to examine the impact of a sub-set of human society – those living in poverty – on the environment and the obverse relationship. There are a number of differing theoretical perspectives in the literature regarding the poverty-environment relationships, which are examined below.

The Brundtland Report identified poverty as the most prevalent cause and effect of global environmental problems, noting that it was therefore, "...futile to attempt to deal

with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality”, (WECD 1989). This perspective was informed by the Downward Spiral Approach (Orthodox Approach) which states that as poor people are forced to deplete resources for survival, their degradation of the environment further impoverishes them, making their survival even more difficult and uncertain, (UWI-SEDU 2008, p.22).

Another perspective is the concept of environmental entitlements. The main argument raised is that the links between environmental change and impoverishment are not direct. This perspective places an emphasis on the role of institutions in extracting and distributing the benefits derived from the environmental goods and services. According to a study by the University of the West Indies’ Sustainable and Environmental Development Unit (UWI-SEDU) commissioned by the OECS in 2008, institutions at multiple scales may interact to shape the patterns of interactions between individuals and groups, the benefits they derive from the environment and the ways in which they manage them, (2008, p.23). Environmental entitlements essentially refer to access to resources and control over those resources, which includes government legislation, markets, land tenure, customary right, access to capital and technology to transform resources etc., where the power and control of resources lies, affects the course of peoples’ relationship to the environment, their livelihoods, and overall well-being.

Moreover, according to Ambler (1999, p.34) there are several myths which plague the understanding of the poverty-environment nexus. Three of the most pervasive myths identified by Ambler are examined below.

1. The first myth is that poverty is the cause of environmental degradation. Such a reductionist approach, like that which informed the 1989 Brundtland Report, is

based on misconceptions about the linkages between poverty and the environment. According to Ambler,

the linkages between poverty and the environment are complex and require locally-specific analysis to be understood...in fact much evidence suggests that the non-poor, wealthier farmers, agricultural investors, and multinational corporations, often control much more total land area than the poor, and have played a prominent role in large-scale clearing of natural vegetation, overuse of agro-chemicals, and over-exploitation of soils for export production, (1999, p.34).

This myth persists due to the fact that poor populations tend to be highly concentrated in degraded environments. However, many have been forced onto marginal lands and fragile sites due to their powerlessness over resources and representation. Although there are situations where they may be responsible for environmental degradation, there are also many more instances where the poor are actually maintaining or improving their environment, (UWI-SEDU 2008, p.25).

This can be seen with the Zabbaleen, a religious minority group in Egypt who have served as Cairo's garbage collectors for over fifty years, recycling up to 80% of the waste they collect, (Assaad 1996, p.118). Furthermore, "studies have failed to show a common pattern in the relationship between poverty and resource use", thus alluding that the causal link between poverty and environmental degradation is erroneous, and in fact more complex than perceived, (Ambler 1999, p.34).

2. The second myth argues that improvements to environmental management and protection need be on the back-burner to poverty reduction strategies. This is based on the belief that the precarious situation of the poor means that they are more inclined to exploit the environment to satisfy present needs over safeguarding resources for future needs. However, Ambler argues that, "when properly structured, the improvement of the environment and the reduction of poverty can occur simultaneously", (1999, p.36). Moreover, recognizing the

interconnectedness of urban poverty and its multiple deprivations, dealing with environmental degradation, environmental hazards and a poor health environment should be a necessary component of any poverty alleviation strategy.

3. The third myth that persists is the belief that the poor are too indigent to invest in proper environmental management practices, a phenomenon dubbed “conservation-investment poverty”, (SEDU 2008, p.25). Although it is recognized to be site-specific based on the investments needed to address a particular risk faced in terms of local labour and non-labour inputs, Ambler argues that “...there is strong evidence to suggest that when incentives are favourable, even the poor can mobilize enormous resources, particularly labour”, (1999, p.36). For example, he cites that in Gujarat, India, a poor group of tribal people pay the full cost of pump irrigation, with the help of an NGO, Aga Khan Rural Support Programme (AKRSP). The wealthier Indian farmers on the other hand receive government subsidies. As such, it is clear that when the benefits of investing are comprehensible, the poor have an incentive to do so, (Ambler 1999, p.36).

3.3.1. Urban Poverty and the Environment

During the period of 1993-2002, the incidence of urban poverty on a global scale did not change significantly using the USD\$1 a day threshold; however, it has shown a decline for the USD\$2 a day threshold, following the overall trend in the decline of poverty, (Baker 2008, p.13). Of the total decline in the poverty rate (8.7%) at the USD\$2 a day threshold, 4.8% is attributed to rural poverty reduction, 2.3% to urban, and 1.6% to the population shift effect (Ravallion et.al. 2007). As such, the pace in urban poverty

reduction has been slower than the reductions in rural poverty reduction, reflecting an overall urbanization of poverty, (Baker 2008, p.13).

Although the urban poor are quite diverse across regions, countries and even within cities, they tend to face a number of common deprivations which affect their day to day lives. With regard to absolute poverty in an urban context, Satterthwaite identified eight interrelated sets of deprivations. These are:

1. *Inadequate income (and thus inadequate consumption of necessities such as food and clothing)*
 2. *Inadequate, unstable, or risky asset base such as educational attainment, housing etc.*
 3. *Inadequate shelter (typically poor quality and overcrowded)*
 4. *Inadequate provision of public infrastructure (piped water, sanitation, drainage, roads, etc.)*
 5. *Inadequate provision of basic services such as schools, health care, waste management*
 6. *Limited or no safety net to ensure basic consumption can be maintained*
 7. *Inadequate protection of poorer groups' rights through the operation of the law, including laws regulating pollution control, environmental health, civil and political rights etc.*
 8. *Poorer groups' powerlessness within political systems and bureaucratic structures, leading to little or no possibility of receiving entitlements; of organizing, making demands, and getting a fair response; and of receiving support for developing their own initiatives.*
- (2003, p.75-76).*

This widening in the definition of urban poverty is also central to understanding the environmental hazards associated with poverty. Environmental hazards faced by low-income groups are often more related to inadequate provision of infrastructure and services, lack of any rule of law, discrimination, and lack of political influence, than to a lack of income. A growing number of case studies show how the deprivations associated with low-income can be much reduced without increasing incomes but rather improving infrastructure and services or through political changes, which allow low-income groups to negotiate more support, (Satterthwaite 2003, p.76).

Urban centres have historically been the foci for infectious diseases due to the prevalence of unsafe and inadequate water supplies, inadequate provision for sanitation and solid waste disposal, overcrowding, and ineffective pollution control. These conditions create urban environmental hazards which disproportionately burden the urban poor. Satterthwaite defines environmental hazards as, “the surroundings within which individuals live/work, where they face the threat of disease, injury, and/or death

due to their environment”, (2003, p.76). The article identifies three types of environmental hazards:

1. *Chemical – indoor air pollution from smoke or fumes from open fires, outdoor air pollution such as smog, acid rain, motor vehicle emissions which can cause inflammation in the respiratory tract, asthma etc.*
2. *Biological – diseases transmitted through water, air, soil, and food or through insect/animals vectors. E.g. malaria – prevalent in areas where there are inadequate provisions for clean water, sanitation, drainage, waste collection and ventilation.*
3. *Physical – accidents in the home due to the use of open stoves for cooking and/or heating; traffic accidents; dangerous working conditions; and unsafe or inadequate recreational (play areas) for the public.*

(Satterthwaite 2003, p.78/9).

By nature of their poverty, the poor are often forced onto more hazardous living areas where environmental resources are sometimes further degraded. However, Satterthwaite’s model recognizes that the way in which environmental resources are used by others also affects the livelihoods and survival strategies of the poor. In fact, most of the hazards outlined above are the result of inadequate policy provisions to provide for example, basic public services such as garbage collection; or the lack of regulations to reduce the levels of pollution being emitted by major industrial businesses. In many instances, the poor are located near these industrial sites and face first hand exposure to various pollutants.

Among developing countries, environmental hazards are predominantly experienced by the low-income groups. Many diseases and disease vectors thrive when provisions for water, sanitation, drainage, and garbage collection are inadequate. Moreover, it is common for thirty to fifty percent of the solid waste generated in an urban area not to be collected, particularly in lower-income areas, (Satterthwaite 2003, p. 78). Therefore, waste accumulates in open spaces and streets, clogging drains and attracting disease vectors and pests (rats, mosquitoes, flies etc.). The urban poor in slums and squatter settlements of developing countries are generally those who suffer most from the lack of collection services. These areas are often totally neglected by the

authorities due to their illegal status and lack of political voice. In Saint Lucia, garbage is collected twice a week in areas outside of the city centre of Castries, and town centres of Soufriere and Vieux-Fort. However, in a slum community like FAC, where door-to-door pick up is not available, communal bins have been set up at two points within the community for bi-weekly waste collection. However, based on reports from residents in the community during the survey process, garbage is not collected on a consistent basis and the bins regularly overflow with garbage.

The inadequate infrastructure and services - piped water supplies, sewage connections (or other systems to dispose of human wastes), garbage collection - and basic measures to prevent disease and provide health care, ensure that many diseases are endemic among poorer households, including diarrhea, dysenteries, typhoid, intestinal parasites and food poisoning, (Hardoy, J.E.; Satterthwaite, D. 1991, p. 342). When combined with malnutrition, these can weaken the body's defense so that measles, pneumonia and other common childhood diseases become major killers (Cairncross et al, 1990). Official figures suggest that people in urban areas are better served than in rural areas, but public provision to remove and safely dispose of human excreta is usually no better in poor, urban neighbourhoods than it is in rural areas. This trend is also apparent in Saint Lucia. The health problems that arise from this are usually more serious in urban areas because higher population densities make it more difficult the protection of people from contact with excreta, (Cairncross et al, 1990).

Furthermore, urbanization has led to the consumption of more packaged products by the middle- and upper-classes, which has led to a higher percentage of inorganic materials – metals, glass, plastic, textiles etc. – entering the waste stream. These materials such as discarded tin cans or plastic wrappers provide potential breeding grounds for disease vectors and pests (Satterthwaite 2003, p.73). The lack of

basic waste management services feeds into a cyclical relationship that perpetuates poverty among urban residents by creating environmental hazards. These hazards pose a constant threat of disease and ill-health, injury, and even premature death, thus hindering adult residents from maintaining some form of work or going out to look for work, while children may be unable to attend school.

While the urban economy provides opportunities for many and is the basis for growth and job creation, not all those living in cities benefit from these opportunities. In addition to the environmental hazards, the urban poor face challenges of “low skills, low wages, unemployment and under-employment, a lack of social insurance and unsatisfactory working conditions”, (Baker 2008, p.14). In some countries, the spatial location of slums, inadequate infrastructure, and a negative stigma are also constraints to employment.

As a result, the majority of the urban poor are believed to work in the informal sector. Available estimates suggest that the size of informality ranges from 30% to 70% of Gross Domestic Product (GDP) in developing countries – though this figure is not known for Saint Lucia specifically, (Daniels 2010, p.4). While it is noted that the informal sector provides employment for many that cannot enter the formal labour market, and supplies goods and services typically not offered by the formal sector, it is also characterized by relatively poor working conditions and other environmental hazards, lack of social insurance, operating outside the legal system, and is more vulnerable to economic fluctuations, which particularly affects the poor who have relatively little savings, (Baker 2008, p.15).

In cities, income inequality is particularly sharp where modern cosmopolitan zones can be found within a short distance from slums. Inequality in access to services, housing, land, education, health care, and employment opportunities can have socio-

economic, environmental and political repercussions. The highly visible disparities in wealth, services and opportunities, can create frustration, tension and a sense of exclusion for the poor, (Baker 2008, p.19). For the urban poor, exclusion is extremely evident in day to day life ranging from educational inequality across schools to spatial barriers in access to jobs.

While there is no direct causal relationship between inequality, exclusion, and crime and violence, there appears to be a link. There is evidence that crime and violence occur more frequently in settings where there is an unequal distribution of scarce resources or power, coupled with weak institutional controls – highly characteristic of cities in less developed countries, (UN-HABITAT, 2006). Within cities in Latin America and the Caribbean, “disparities in violence levels are based on neighbourhood income levels, with the higher income areas suffering from property-related violent crime, while severe violence is concentrated in the lower income areas, particularly in poor neighbourhoods on the periphery of cities”, (Baker 2008, p.20). Saint Lucia is no exception to this trend. Cities where inequalities and exclusion are strongly evident also appear to be vulnerable to insecurity. Such examples include protests in slums in South Africa (2005), and gang warfare in Los Angeles, Nairobi, and Rio de Janeiro, (Baker 2008, p.20). In Saint Lucia, the 1990s saw a rise in gang warfare within the district of Castries, with gang members coming from some of the poorest urban communities such as Marchand, Graveyard, Baron’s Drive, and Faux-a-Chaud. These clashes were largely related to competition over the underground drug market, (C. King, personal communication 2010).

Programs aimed at the urban poor can be categorized as three types; i) those aimed at improving living conditions mainly through slum upgrading but also through public housing schemes, sites and services schemes, providing access to credit and

housing finance, rent control, land titling, infrastructure improvements and utility subsidies; ii) programs aimed at improving the income of the poor through job training, micro-enterprise development, and the provision of childcare; and iii) safety net programs targeted to the most vulnerable, such as, cash transfers, food stamps, feeding programs, fee waivers, subsidies, and public works programs, (World Bank Group 2011). In Saint Lucia, social funds such as the Poverty Reduction Fund (now the St. Lucia Social Development Fund), have been established under the Ministry of Social Transformation to reduce and alleviate poverty by responding to the needs of the poor as identified by local groups and communities. The Fund focuses on social, economic, and physical infrastructure projects, and capacity building, (Kairi Consultants 2006, p.100). Poverty reduction has focused primarily on assisting rural communities, particularly those devastated by the decline in the banana industry in the 1990s. There are no agencies or funds that target the urban poor specifically, however, the Fund's collaboration with the National Skills Development Centre in the early 2000s - to provide training to ensure the expansion of skills for self-employment – was "...seen as a mechanism for providing assistance in unplanned communities of the urban and peri-urban areas inhabited by poorer people", (Kairi Consultants 2006, p.101). In addition, at the national level, the focus has been job creation through initiatives such as the Short Term Employment Programme. There is no national safety net for the population.

3.3.2. Linkages between Poverty and the Environment in the Caribbean

In 2008, the Environment and Sustainable Development Unit (ESDU) of the Organization of Eastern Caribbean States (OECS) commissioned the University of the West Indies' Sustainable and Environmental Development Unit (UWI-SEDU) to

undertake a study “to examine and analyze the relationship between environmental management and poverty in the OCES with case studies of Grenada, St. Vincent & the Grenadines, Saint Lucia and Dominica”, (UWI-SEDU 2008, p.11). The study provided valuable information and data on the Caribbean context of the poverty-environment nexus, as well as a review of the legal, institutional and policy frameworks for addressing poverty eradication and environmental management in the case study countries.

Traditionally, poverty studies and measurement in the Caribbean have been dominated by economic and quantitative methodologies, focusing primarily on income and consumption patterns. To this point, even the conceptual framework for the aforementioned report places the economy as the central element, while the environment and society play secondary roles, their importance deduced by their contribution to economic growth. With the changing understanding of poverty in the 1990s, there was a push for a more holistic approach to poverty studies that identified both material and non-material aspects of the condition. Therefore, between 1996 and 2002 a number of surveys were conducted in several Caribbean countries by the Sustainable and Environmental Development Unit of the University of the West Indies, in this regard. The surveys assessed the frequency of poverty by measuring “...the ability to finance a basic consumption basket of food and non-food items such as education, housing and transportation”, (UWI-SEDU 2008, p.45). The results of these surveys are denoted below in Table 3A. Haiti and Suriname experienced the most severe rates of poverty with 65% and 63% respectively of their populations below the poverty line, due to historical social, political, and economic instability. Countries such as Guyana, Dominica and St. Kitts and Nevis were in the 30% to 40% range, while islands such as Saint Lucia, Anguilla, Trinidad and Tobago were in the 20% to 29% range. Jamaica and

Barbados experienced the lowest rates of poverty at 17% in 2001 and 14% in 1997, respectively.

3-A: Table Denoting Poverty Indicators for Selected Caribbean Countries

Country	Year CPA Conducted	% below Poverty Line	% below Indigence Line	Poverty Gap	FGT P2 (Severity)
Barbados*	1997	13.9	-	na	na
Belize	1996	33	13.4	8.7	4.3
Grenada	1999	32.1	12.9	15.3	9.9
Guyana*	1999	35	19	12.4	na
Jamaica*	2001	16.8	na	na	na
Nevis®	2000	32	17	2.8	1
St. Kitts®	2000	30.5	11	2.5	0.9
St. Lucia®	1999	25.1	7.1	8.6	4.4
St. Vincent and the Grenadines®	1996	37.5	25.7	12.6	6.9
Trinidad and Tobago	1992	21.2	11.2	na	na
Turks and Caicos Islands®	1999	25.9	3.2	5.7	2.6

n.a – Not available

® The CPAs were conducted by the Caribbean Development Bank

Source: Thomas, Mc Donald and Win, Eleanor. Inequality and Poverty in the Eastern Caribbean. Caribbean Development Bank. Prepared for the ECCB Seventh Annual Development Conference, November 2002.

The face of urban poverty in the Caribbean includes the elderly, children, the disabled, unskilled workers, and predominantly female-headed households, (UWI-SEDU 2008, p.46). The employed poor work largely in the informal sector, in rural areas as agricultural labourers, while in urban areas they work as wage employees in the manufacturing and service sector (hotels, vendors, bus drivers etc.). The underemployed or unemployed - many of whom did not complete their primary or secondary schooling – have few employable skills with which to enter the labour market, (UWI-SEDU 2006, p.46). In urban areas, the poor are also highly vulnerable to crime and violence, which has been on the rise in the Caribbean region. In Saint Lucia, it is difficult to make any longitudinal comparisons due to changes in the data collection methodology of the Census between 2000 and 2010. However, from the 2001 Housing and Population Census, the percentage victims of crimes between May 2000 and May

2001 were identified as 7.3% for Castries City, and 6.0% for Castries Suburban. It should also be noted that these were the highest percentages among all the districts by two to four percentage points, (2001 Housing and Population Census, p.87). The negative ramifications of this go beyond those involved, and affect quality of life of community members, while also incurring high economic costs required to strengthen police enforcement, support the growing prison population and provide health care for those injured by violence, (UWI-SEDU 2008, p.46).

The city scape is particularly vulnerable to environmental hazards from domestic, commercial and industrial discharges such as chemical waste, garbage, and harmful gaseous emissions, in urban areas that contaminate air, land, and water. This in turn has caused environmental degradation which not only harms the flora and fauna, but also poses health risks to city dwellers. Industrialization and economic growth are highly concentrated in cities throughout the Caribbean region and remain responsible for much of this pollution, despite the rapid urbanization which has taken place over the last two decades, (UWI-SEDU 2008, p.50). Three of the most dominant threats to the urban poor are air pollution, inadequate waste management systems, and chronic water shortages at the national scale. According to UWI-SEDU, “the use of motor vehicles produces more air pollution than any other single human activity and impacts morbidity and mortality rates”, (2008, p.51). In addition, water shortages mean that good quality drinking water is not available to everyone, particularly in the concentrated city areas. As such, this has serious implications for adequate sanitation and sewerage, (UWI-SEDU 2008, p.51). In many instances this has meant that communities dump their waste into nearby rivers, the sea, or onto the nearby land, thereby exposing themselves to hazardous waste and associated health risks.

Recognizing the inextricable interconnectedness of society, the economy and the environment, systems of national, regional and international planning and policy making, one must move against the tradition of treating each element as distinct and unrelated to each other. Declarations such as this one, coupled with the actual work taking place on the ground must attempt to break down these artificial barriers and configure new paradigms of planning which integrate these four dimensions of human reality: social, economic, political and environmental. For SIDS where there is little distance between man and the environment, thus nowhere is this integration more crucial.

3.4 Resource Recovery

The term 'resource recovery' (RR) in its broadest sense includes, "the repairing, refurbishing, or remanufacturing of discarded goods; the separating, reprocessing, and recycling of raw materials such as glass, paper, or aluminum; and the processing of selected fractions of the waste stream into new products such as compost for energy", (Bartone 1990, p.7). RR is a different way of thinking about waste. Rather than viewing waste as something to be disposed of, resource recovery views waste as a resource that can continually provide value and add to the inventory of opportunities available for use by communities.

Resource recovery is not a new approach to waste management but in fact it is an internationally recognized municipal solid waste management strategy for providing cost-effective services in an environmentally sound manner. In both Western Europe and Japan, resource recovery is widely practiced as a matter of policy, while in the early 1980s many individual states in the United States began implementing policies to increase resource recovery efforts, (Bartone 1990, p.7).

In response to the inadequate provisions of basic services in peripheral urban slums and the absence in many developing countries of a policy framework for such efforts, the urban poor have found innovative and create ways to address some of their everyday problems. By utilizing their local knowledge of recovery, reuse, and recycling - behaviour characteristic of poor populations for centuries – they have capitalized on the inadequate waste management services in the city and the simultaneous increase in waste production in these areas, by providing such services. Yet, it is only recently that the international community has come to recognize the economic, social and environmental benefits of the informal sector in solid waste management by the urban poor, in developed and developing countries alike, (Nas & Jaffe 2003, p.337). Informal resource recovery can contribute to poverty alleviation, environmental sustainability and better communities, and can be fostered by better government models that recognize the benefit and importance of this sector, (Tremblay et al. 2009, p.422).

In many developing countries, the informal economy of resource recovery is dominated by the urban poor or low-income groups who are capable of working. The informal sector is characterized by “small-scale, labour-intensive, largely unregulated and unregistered, low-technology manufacturing or provision of services...while participants do not pay taxes, have no trading license and are not included in social welfare or government insurance schemes,” (Wilson et al. 2006, p.797). Scavengers (informal waste pickers) are driven by high levels of underemployment, and the low purchasing power for basic consumer goods, and the market need for low-cost raw materials for industry (Wilson et al. 2006, p.798). In the context of municipal solid waste management (MSWM), the informal recycling sector refers to the waste recycling activities of scavengers and waste pickers who are involved in the extraction of recyclable and reusable materials from mixed waste, (Wilson et al. 2006, p.797). In

Kenya for example, the informal sector comprises a full three quarters of the non-agricultural economy, (Daniels 2010, p.3). Under severe material constraints, the poor are forced to improvise solutions to everyday problems, which sometimes results in innovations that better address local needs. Informal artisans who engage in the production of goods in Kenya are known as *Jua Kali* (Swahili for “hot sun”) and have established entire ecosystems of production, from scrap sourcing to repair. The most advanced have designed and built capital goods that propel indigenous production forward, (Daniels 2010, p.3).

From an economic perspective, resource recovery can be extremely beneficial to developing countries due to the fact that: “they are well adapted to the prevailing conditions, namely abundant supply of working force, but scarce capital; and they minimize capital expenditures and maximize hand (and animal) power,” (Wilson et al. 2006, p.802). They are also able to provide a steady, reliable supply of secondary raw materials for local manufacturing industry which can replace more expensive imported raw materials. This in turn stimulates the manufacture of low-cost, affordable products made from recycled materials, (Wilson et al. 2006, p.802). The informal resource recycling sector is often highly skilled at identifying wastes with potential value; collecting materials when they have been discarded as waste and add value to them by sorting, cleaning, altering the physical shape to facilitate transport or by aggregating materials into a commercially viable quantity, such as compressing aluminum cans to minimize volume and therefore increase the amount being transported, (Wilson et al. 2006, p.800). Informal recycling systems can be highly efficient, for example, recovery rates as high as 80% are achieved by the Zabbaleen in Cairo due to intensive manual sorting and their expertise at extracting waste with value. Commonly collected materials are plastics, paper, cardboard, aluminium, steel and other metals, glass, and textiles

(Wilson 2006, p.801). Organic wastes can also have monetary, nutrient or energy value, as they are used as livestock fodder, soil improvers and fuel, (Wilson et al. 2006 p. 801).

3.4.1. The Challenges to Informal Resource Recovery

Resource recovery in the hands of the informal sector can create problems; some authorities view this sector with suspicion, and often refuse to acknowledge the important role they play in waste management operations. The lack of acknowledgement is an impediment because it prevents scavengers and waste pickers from gaining formal recognition for the work that they do. As a result, their vulnerability is exposed as they must work under the proverbial radar for fear of harassment or coercion by the authorities (e.g. Columbia). Moreover, individual scavengers and waste pickers tend to be located at the lower end of the hierarchy of informal recycling activities and therefore may be easily exploited by “primary and secondary dealers...intermediate processors, brokers and wholesalers...”, (Wilson et al. 2006, p.800). The attitude of the formal, private waste management sector is often one of animosity as they are forced to compete with the informal sector. The attitude of the formal, public waste management sector to informal resource recovery is often very negative, regarding it as “a second-rate economy, backwards, unhygienic and generally incompatible with modern solid waste management systems”, (Wilson et al. 2006, p.798). Failed by predatory governments and formal enterprises, the potential of the informal sector has been restrained to a relatively small portion of GDP, despite comprising 72% of employment in Sub-Saharan Africa, 65% in Asia, and 51% in Latin America, (Daniels 2010, p.4). Thus, organic growth of the informal sector alone has proved insufficient to meet the growing product and infrastructure requirements of these emerging markets. Yet, despite being ignored by formal institutions, their drive for

innovation, understanding of indigenous networks, and ability to work under extreme constraints make them ideal agents of industrialization.

In addition, one of the aims of modern waste management is to move “up the waste hierarchy,” that is, reduce the reliance on disposal and increase recycling. Thus, it would seem ironic to move forward by deliberately eliminating what can be a rather efficient, existing recycling system. Also, the Millennium Development Goals focus development efforts on poverty reduction, and again it would seem counter-intuitive to try to move forward by removing the livelihoods of a major section of the urban poor (Wilson et al. 2006 p.798). Experience shows that resource recovery provides significant economic benefits for the urban poor, and that it can be highly counterproductive to establish new formal waste recycling systems without taking into account informal systems that already exist, (Nas & Jaffe 2003, p.337). Informal waste management systems reveal great development potential and therefore the preferred option is to integrate the informal sector into formal solid waste management planning processes, building on their practices and experience, while working to improve efficiency and the living and working conditions of those involved, (Nas & Jaffe 2003, p.337).

Integrating informal resource recovery activities into formal waste management systems has been occurring for decades. A successful approach was undertaken in Ciudad Juarez, Mexico where local scavengers organized into a recycling cooperative in 1975 and obtained a concession from the municipality to operate a landfill and establish centralized recycling activities, (Bartone 1990, p.16). The results have included, greatly improved working conditions for the scavengers, and an acceptable refuse management system for the municipality, (Bartone, 1990, p.16). Another example of the successful integration of informal resource recovery methods into a formal waste management system is the establishment of scavenger co-operatives in Colombia. According to Nas

& Jaffe (2003, p.342), Colombia has experienced a high level of urbanization and a corresponding rise in urban poverty, with approximately 50,000 families involved in scavenging as a livelihood. However, NGOs and certain governmental agencies have supported and initiated scavenger co-operatives that help waste pickers accrue the full benefits of their labour, often exploited by middlemen. These co-operatives have been able to offer “start-up funding and loans, technical, managerial, legal and economic consultancy services”, (Nas & Jaffe 2003, p.342). And finally, a positive intervention occurred in Belo Horizonte, Brazil where the involvement of a local Roman Catholic Church group led to the formation of “street scavengers association” that was eventually included by the municipal government in its new ‘sustainable development’ inspired waste management model, (Nas & Jaffe 2003, p.342). These street scavengers became responsible for the collection of recyclable materials in the city, received operational support and educational opportunities. As a result, they gained legal recognition, better living and working conditions, while the level of cleanliness of the city increased, (Nas & Jaffe 2003, p.342). These examples denote what a productive relationship between local government, community-based organizations, NGOs, and marginalized groups can achieve.

Unfortunately, there have also been unsuccessful attempts at integration due to resistance from government authorities who fail to recognize informal resource recovery as a positive contribution to society and the economy. This leads to conflicts and high levels of operational inefficiency, which only denote the necessity of policies to reconcile the interests of waste managers and informal groups so they may compliment each other. One example of this occurred in Bandung, Indonesia, where a section of the Technical University of Bandung spearheaded the establishment of scavenger co-operatives in order to take over the role of the middlemen and direct further profits

towards the waste pickers, (Nas & Jaffe 2003, p.341). The scavengers also became involved in composting to increase their income. Nevertheless, the negative attitude of the government towards scavengers became a bottleneck that led to the eventual collapse of the co-operatives. Although attitudes have changed significantly today, the scavengers still work informally and independently, (Nas & Jaffe 2003, p.341).

The above example denotes the need for a governance and policy framework that supports the creation of self-sustaining, urban, social enterprises that provide jobs for inner city residents while pursuing alternative approaches to environmental initiatives, encouraging economic development, and social cohesion. International experiences such as in Diadema, Brazil reveal many socio-economic and environmental improvements for participants, including:

...increased income by strengthening ties with industry and the local government; social inclusion through improved organization and legitimization of activity; increased efficiency in resource recovery through capacity building to improve source separation and door to door collection; improved health awareness and education; and formal recognition as service providers through the establishment of new bylaws that pay the recyclers for the amount of recyclables collected from households,

(Tremblay et al. 2009, p.426).

It provides an integral link between the informal waste sector, government and society through capacity building, education programmes, and occupational health guidelines. In general, a regulatory framework sets the rules and standards for development, and more specifically, for the functioning of the built environment.

Furthermore, the integration of informal resource recovery activities into formal waste management systems offers an opportunity for economic survival and social inclusion to individuals living on the margins of society. (Tremblay et al. 2009, p.423). The need for policy initiatives that recognize and support such work is essential to making these marginalized groups feel that they are appreciated as important contributors to their community and society, thereby developing a sense of achievement, fulfillment and worth, (Tremblay et al. 2009, p.424). Sen (1999) would argue that

establishing these feelings of self-worth and empowerment are just as important as the physical and economic contributions of their work. Moving forward this is a very significant aspect of integration because it lends itself to the issue of sustainability, a key aspect of any development project. By empowering the target population, one is building the capacity of the group, and increasing the likelihood that persons will remain invested in ensuring the continuation of the co-operative, for example.

3.4.2. Implementing a Resource Recovery Program

Today, as cities continue to grow at an ever increasing rate, local authorities and urban elites everywhere are facing mounting problems in dealing with the growing volumes of solid waste. Conventional approaches have included the purchase of high tech equipment such as compaction vehicles, incinerators and computerized routing programmes, usually with little regard for its potential impacts, (Ahmed et a. 1996, p.8). Although a great deal has been written about the need for appropriate technology, by scholars such as E. F. Schumacher in *Small is Beautiful: Economics as if People Mattered* and G. McRobie's *Small is Possible*, decision makers in less developed countries, as well as donor agencies seem to have underestimated the complexity and thus the vulnerability of such high-tech waste technology, as well as its high maintenance costs and the need for skilled operators.

Although there has been little written on small-scale resource recovery until recently, some urban scholars - recognizing the impressive rate at which the scale of resource recovery has increased in certain economically less developed countries - have begun proposing a sustainable development model that empowers indigenous producers and leverages their creativity and drive, (Daniels 2010, p.5). This is deemed to have the potential to rework globalization in the favour of the informal sector, allowing

them to grow on a foundation of indigenous innovation that both provides for the needs of the local economy and brings in new capital through investment and export, (Daniels 2010, p.5). More specifically, the question of waste in developing countries' cities requires solutions that do not depend on high-tech equipment, and are appropriate for the socio-economic conditions in less developed countries, (Nas & Jaffe 2003, p.342). Furthermore, the most appropriate solutions are now regarded as those that take into account the needs of the people who are already involved in the (informal) recycling business and the financial capabilities of local and national governments. Whereas industrialized countries have often pursued a capital-intensive development trajectory, in low-income countries the large labour surpluses and low wages should favour the choice of labour-intensive options, (Ahmed et al. 1996, p.8).

In many developing countries, various types of local machinery and equipment have been developed in the recycling sector. As such, a wealth of valuable experience has been gained in adapting and upgrading resource recovery processes so far. However, one way of enhancing this local knowledge might be by providing the micro-entrepreneurs (resource recovery workers) with scientific knowledge at none or low cost, (Ahmed et al. 1996). Innovation may also be stimulated through the exchange of information (knowledge and experience) between various parts of the world, like the so-called South-South technology transfer. For example:

Glass blowers in Cairo produce bowls from used glass. Their products, however, often contain air bubbles causing breakages, in contact with a hot liquid. In Manila, these micro-entrepreneurs found a solution by changing the design of the furnace and putting an additive into the glass: the bubbles disappeared and the glass became heat-resistant,

(Ahmed et al. 1996, p.9)

Although such adaptations may sometimes result in higher costs, they will also result in increasing the monetary value of the recycled products, and thus increase incomes and employment opportunities, (Ahmed et al. 1996, p.9).

Furthermore, unlocking the potential of the informal resource recovery sector will require the collaboration of actors external to the sector by creating linkages among all players, including governments, non-governmental organizations (NGOs), formal enterprises, and academic institutions, (Daniels 2010, p.9). According to Daniels, the roles of the various actors should metamorphose as follows: “the government should provide appropriate infrastructure and ensure opportunities for capital and resources; NGOs may offer training and business development services; large enterprises - private and public - should subcontract to the smaller ones in order for capital to trickle down”, (2010, p.9). Educational institutions can also play an important role by obtaining reliable data on the sector, propose appropriate interventions, and develop new technologies to be channeled through the sector, (Daniels 2010, p.9).

One regional example of a recycling programme that capitalized on creating linkages with various actors to secure one of the few viable recycling businesses in the Caribbean, and provides valuable insight for future organizational and policy development, is the Antigua & Barbuda Waste Recycling Co-operative (ABWREC). ABWREC is a non-profit organization, established as a project of the Rotary Club of Antigua Sundown, in partnership with the government through the National Solid Waste Management Authority and the Environment Division and Central Board of Health, (UNDP-Small Grants Programme official website, 2006). They specialize in the collection of non-biodegradable, recyclable materials collected island-wide (residential and commercial waste) that is then processed and exported to recycling centres in North America and Trinidad. Revenues earned from the sale of the materials are then used to cover the operating costs of the programme and keep it sustainable, (UNDP-Small Grants Programme official website, 2006). Moreover, the co-operative has created small scale employment for disadvantage individuals (handicapped, recovering drug addicts

and alcoholics) by hiring them to collect recyclables from the various communities around the island, (UNDP-Small Grants Programme official website, 2003). In addition to their education unit, aimed at sensitizing the public to recycling, the ABWREC has most recently partnered with the non-profit organization, *Hope Floats*. *Hope Floats* connects cruise ship passengers interested in volunteering with island-based organizations. It allows individuals and families alike to serve at one or all ports of call on their voyage and be back on the ship by early afternoon, (Hope Floats official website 2012). ABWREC provides a good organizational structure that could be used as a template for the resource recovery programme being researched for this study in Saint Lucia. Moreover, linkages with organizations such as *Hope Floats* provides interesting and relevant examples of sustaining a RRP, especially given Saint Lucia's booming cruise tourism industry.

3.4.2.1 Test Case Resource Recovery Programme

The resource recovery programme as envisioned by the researcher targets an urban, low-income community that is experiencing solid waste management problems due to improper waste management practices and inadequate disposal options and facilities. The literatures above speak to the causes of such circumstances/conditions as well as their negative ramifications. The objective of the RRP is to assist in the alleviation of poverty in the community through addressing a key deprivation, that is, inadequate solid waste management, by providing:

1. Employment opportunities for members of the urban poor community
 - a. Relatively stable and full-time employment
 - b. Guaranteed minimum standard of pay that keeps persons above the poverty line

2. Asset formation
 - a. Skills training for product development
 - b. Training in business development services
3. Knowledge in sustainable solid waste management practices
 - a. Engage residents in household recycling and composting
4. A cleaner environment
 - a. Educate residents on proper garbage disposal practices
 - b. Encourage anti-litter behaviour
 - c. Educate residents on environmental conservation and protection
 - d. Educate residents on dangers of environmental hazards
5. Empowerment/Capacity Building
 - a. Formation/revamping of a Community Development Committee
 - b. Leadership training
 - c. Project management training
 - d. Proposal writing training

Segments of this outline above were inspired by the community-based development approach undertaken by the SSDF to implement the Special Framework of Assistance 2006 Programme (SFA 2006). See Appendix I. The researcher had the opportunity to work as a consultant on the SFA 2006 programme from October 2011 to February 2012. As such, the experience provided a practical and realistic guide for approaching communities, developing projects, and ensuring their sustainability. The SFA 2006 Programme implemented a three-tier strategy, which was based on: 1. providing the community residents with skills training to make them more employable; 2. capacity building by creating or revamping community development committees, and providing

the elected executive with appropriate training; 3. a physical infrastructure project identified by the community.

In order to achieve the objective, the first step would be to form a Development Committee (DC) should one not already be in place in the community. The Development Committee would provide a forum to introduce the research idea to community members and gauge their support. It would also be one of the vehicles for procuring funding for the project. Development Committees are capable of applying for funding through agencies such as the St. Lucia Social Development Fund, as well as other regional and international organizations, once they are legally registered entities. Some communities have Youth and Sports Committees as a sub-unit of their Development Committees, and again if legally registered, would be in a position to apply for such funds as being offered by national, regional and international organizations.

Moreover, the DC should be constituted of community residents who would advocate on behalf of the residents, by establishing a Community Development Plan developed through a participatory method. In this way, the members of the DC could truly give residents a voice in matters of local community development planning, as they liaise with a Social Transformation Officer and other government authorities. Once the DC is up and running a legal structure for the RRP would need to be established. As such, a community task force made up of knowledgeable and interested persons should be established. This task force would be responsible for speaking with lawyers and any expert body that would be able to advise them on the best structure for the RRP. Once the legal structure is decided upon, then many of the concerns regarding funding, organizational structure and responsibilities, and decision-making powers etc. will be reconciled.

There are several examples as seen above (see pages 49-54) of micro-enterprises and cooperatives established in developing countries based on this very concept of resource recovery. Another example is Mzuribeads, a cooperative created by of women in Uganda who produce hand-made beads and jewelry. Although it began with just four women who were trained by a now defunct organization, the cooperative now involves more than twenty women, (Mzuribeads official website, 2011). The business is run by volunteers who ensure that all materials and other business expenses are paid in advance by clients and women bead-makers respectively. The women bead-makers are paid a set price for their beads based on the Fair Trade advised standards of payment, (Mzuribeads official website, 2011). The Mzuribeads are all made from recycled paper, cow horn discarded by the meat industry, barkcloth, and banana leaves. See Figure 3-B below.

3-B: Mzuribeads Made from Recycled Paper, Animal Horn and Coconut Husk



Source: Mzuribeads official website. Retrieved on May 12th, 2011 from: http://www.mzuribeads.com/Recycled-Paper-Dodo-15cm_p_32.html

Another example is the Da-Lata Upcycled Ring Pulls which originates out of Brazil. The recycled aluminium ring pulls are collected by “catadores” (Brazilian for “can pickers”) who are part of a larger sector known as waste-picking, though such activities are legal and supported by the Brazilian Government, (De-Lata Upcycled Ring Pulls official website, 2011). The cans are then purchased by Da-Lata who works directly with Brazilian artisans to produce various accessories from purses and belts to dresses and jewelry, which are then fair traded, (De-Lata Upcycled Ring Pulls official website, 2011). One example of their workmanship is the money pouch below:

3-C: A Money Pouch Made from Recycled Ring Pulls



Source: from the Da-Lata Upcycled Ring Pulls official website. Retrieved on May 12th, 2011
from: <http://www.da-lata.com/product/cash-gold-brown>

Based on the above examples, a Co-operative Model should be examined by the task force. The researcher is an advocate of this model because it is, by virtue of its structure, an example of people exercising their democratic rights in the economic sphere. Rothschild argues that denial of democratic processes in the political realm leads to the denial of participation in the economic realm, and vice versa (2009, p.1024). This is already evident in the community of FAC where the lack of real local government instruments relegates the social and economic development of the community to the Central Government (Ministry of Social Transformation). However, if individuals in the community are given the opportunity to chart their own social and economic development through a co-operative enterprise, then it may arouse their appetite for participation, and develop in them an increased capacity for dialogue and democratic decision making, (Rothschild 2009, p.1024). The Co-operative Model allows all workers to own, and have an equal say in the managing of the social enterprise. The notions of equity and democracy are almost in-built into the structure itself. According to Rothschild, "...in cooperatives, workers elect their own into management positions for specified terms of office. Incumbents in such positions remain accountable to the

collective, and they are subject to recall. In the long run, such positions tend to be rotated, giving others a chance to learn and serve”, (2009, p.1027). In addition, cooperative enterprises tend to be very transparent, making the books and other relevant information accessible to all owners/workers, thereby diminishing the potential for corruption, (Rothschild 2009, p.1028). Nevertheless, despite its benefits to community economic development, it will be left to the community to decide on the best legal structure.

In the interim of deciding on a legal structure, however, there would still be several steps that would need to be accomplished in preparation for starting the business aspect of the RRP. As such, the next step would be to educate residents on the environmental hazards associated with the current solid waste management practices, as well as instruct them on proper, more sustainable practices. The educational awareness could take multiple forms to maximize effectiveness and may range from community meetings, multiple smaller group meetings with a standard number of households (e.g. 10), and/or instruction given to each individual household. Facilitators would be required to assist with this so as to ensure that it proceeds in a timely manner. The number of facilitators required and whether they are compensated or working on a volunteer basis will be determined by the funding available and the method of communication chosen. During the educational component, demonstrations of proper waste management practices will be given. That is, residents will be shown what types of materials can be composted and recycled, how to separate and clean the materials. Each household will be provided with a bin for placing all recyclable materials, while households would be asked to provide their own container for composting. The bins would be collected on a fixed schedule, by hired persons from the community. The method of collection is yet to be determined.

The compost would be collected separately from the recyclable materials by contracted individuals from the community. A designated composting area that fits all health and environmental regulations – to be determined by a contracted expert - would need to be identified, since the materials need to be first further broken down in order to create fertilizer for the community garden. An area to plant the community garden of fruits, vegetables, and herbs will also need to be identified. In addition, space for a resource recovery facility would also need to be identified, ideally located near the community to store, sort and process all the recyclable materials, as well as provide a production area. The types of products being made would be dependent on the results of a waste characterization study of the waste being produced by the community. Moreover, the skills and business training would occur prior to the commencement of production of the recyclable materials into high quality, sellable goods, and the start of the community garden. The skills training would be funded by grants secured by the DC.

The products that will be made and sold will be determined by four factors: 1. the results of the waste characterization study; 2. the ability of the researcher and executive members of the programme to mobilize interest among local artists/artisans/jewelers/designers etc. to participate in developing products specifically for this initiative; 3. the willingness of cooperatives such as Mzuribeads and Da-Lata Upcycled Ring Pulls to share knowledge and skills with the Saint Lucian resource recovery programme to produce similar goods; and 4. the local and visitor market tastes/likes with regards to the types of products they would want to purchase. Once the products have been chosen, experts in the field will be asked to train the participants in their production, paid for using the funding secured initially. The sale of these products will commence once certain production standards are met with regard to the quality of the goods, safety etc. according to the Bureau of Standards. The point of sale would be

the Market and/Arcade located in the town centre, owned by the Government. A simple permit would be required in order to set up a display stall at either location, which can be obtained at the Castries City Council. Depending on how successful or popular the sale of these products, the display options may be further developed.

Community residents who participate in the skills training, production and sale of goods will be hired by the executive body of the programme, based on a number of criteria such as: interest, employment and/or income status, size of household and number of persons currently employed, and overall need etc.. These criteria would be determined by the DC. Payment criteria would also need to be determined by the executive body of the programme. With regard to the community garden, the indigent population within the community should be given priority to the produce that is reaped.

The researcher recognizes that there are several logistical challenges that need to be addressed as well as financial and market analyses that need to be performed in order to attain a wholesome picture of the viability or feasibility of such a project. However, since the community is at the core of this project, it is imperative that they support this initiative. Moreover, legislation or lack thereof may also play a critical role in determining whether or not this project gets off the ground. As such, the social and policy aspects of the project were the primary focus of this research study.

4 Methodology

This section will denote the methodology used to carry out the research and collect data for this study.

4.1 The Case Study Research Tools and Procedure

This research was an exploratory case study in which the primary data was garnered from: household surveys conducted in the community of Faux-a-Chaud; direct and participant observation of the community's physical (photographs) and social (public engagement) environment respectively; and in-depth interviews with public officials. This was further supplemented with the review and analysis of secondary data assembled from national statistics, reports, Acts etc. that were relevant to the research topic. The research combined a case study approach, with secondary data and quantitative analysis. As such, the methodology is both qualitative and inductive, and quantitative.

Case studies are often the favoured method for investigating “how” or “why” questions and involve “contemporary phenomenon within some real-life context” (Yin 2003, p.1). They therefore investigate an event, activity, process, or one or more individuals, elements over which the researcher has no control. The case, which is restricted to a specified amount of time and certain activities, requires the researcher to delve into pertinent aspects using prescribed data collection procedures. A case study requires that the researcher investigate the case in depth and detail, thereby spending greater time and energy on a single study and providing a more intensive investigation, (Babbie 2009 p. 318). However, generalizability may be lost for depth and breadth. A

case study relies on a diverse range of variables that are obtained from multiple sources of evidence ranging from documents and archival records to interviews, direct observations and physical artifacts (John 2010, p.75; Yin, 2003). The advantage of employing a case study to acquire information is that it provides more detailed and richer information than can be attained through other exploratory methods (Babbie & Benaquisto 2010, p.319). The researcher used participant observation as a means of understanding the world-views and every day lived experiences of actual people from “the inside”, (Cook 2005, p. 167). The researcher would also observe the physical and social landscape of the community from a distance, watching activities unfold, recording impressions in field notes and photographs.

However, before the researcher could begin immersing herself in the community, access needed to be gained. Through the researcher’s familial, professional network, the researcher was introduced to Mr. Gary Butte, a former resident of Faux-a-Chaud, who still worked in the community as an Art and Craft facilitator in the community’s After-school Programme. Mr. G. Butte was the founder of an Arts Initiative project in the community that eventually became subsumed under the After-school Programme. As such, he had much experience working with the Department of Social Transformation, known as the Community Services Unit. Given the nature of the research, Mr. G. Butte introduced the researcher to Mrs. Blanchard, the acting Deputy-Director of Social Transformation for some guidance. Mrs. Blanchard stated that permission would be required from the Social Transformation Officer (STO) responsible for the community of FAC. She also provided the researcher with the name and contact information of the community leader of FAC, Mr. Cuby King, and suggested that he be contacted as he may be able to assist in the research endeavours. The researcher contacted Mr. King who agreed to assist in the research. Both Mr. C. King and Mr. G. Butte agreed to

participate in the participant observation, and allowed the researcher to follow as they went about their daily activities in FAC. The researcher also engaged in several conversations with Mr. C. King and Mr. G. Butte about life in the community. Moreover, based on availability, Mr. C. King agreed to be the researcher's guide in the community, as she embarked on carrying out a household survey with members of the community.

The purpose of the survey was four-fold: to gain basic demographic information about the community residents, assess the household waste management knowledge, practices and environmental health concerns, gain residents' perception and interest (or lack thereof) concerning the establishment of a resource recovery programme, and finally garner some community information. Moreover, going door-to-door to administer the survey gave the researcher another opportunity to potentially engage in further participant observation with the respondents. The survey consisted of a mix of open- and closed-ended questions, enabling the researcher to get a real sense for the politics and dynamics of the community, which were noted along the way.

4.2 Faux-a-Chaud Household Survey

The survey examined solid waste management strategies at the household level, and measured each household's existing solid waste management practices, individual knowledge and concerns, and willingness to participate in more sustainable waste management practices as well as in a resource recovery programme specifically. The content of the survey was based off of Jennifer Post's study (2007), *Solid Waste Management in Jamaica: An Investigation into Waste Reduction Strategies*. The specific sections included demography; household waste management practices, concerns and knowledge; knowledge and willingness to participate in a resource recovery programme;

and general community information. The following denotes the selection criteria for choosing the urban poor community of Faux-a-Chaud, the survey design and survey procedures.

4.2.1. Sampling Frame: The Community of Faux-a-Chaud

The research study was to be conducted in an urban poor community, within the developing country of Saint Lucia. As such, the following criteria served as a basis for selecting the case study: 1) the community needed to exemplify the characteristics of an urban poor community as defined by the St. Lucia Country Poverty Assessment Report 2005; 2) the community had to be located within the boundary of Castries urban; 3) the SLSWMA needed to have established ties within the community; and 4) the community needed to be relatively safe (determined by the researcher’s level of comfort to conduct the surveys in the specific community). See Table 4A.

4-A: Table Denoting the Selection Criteria for the Research Site

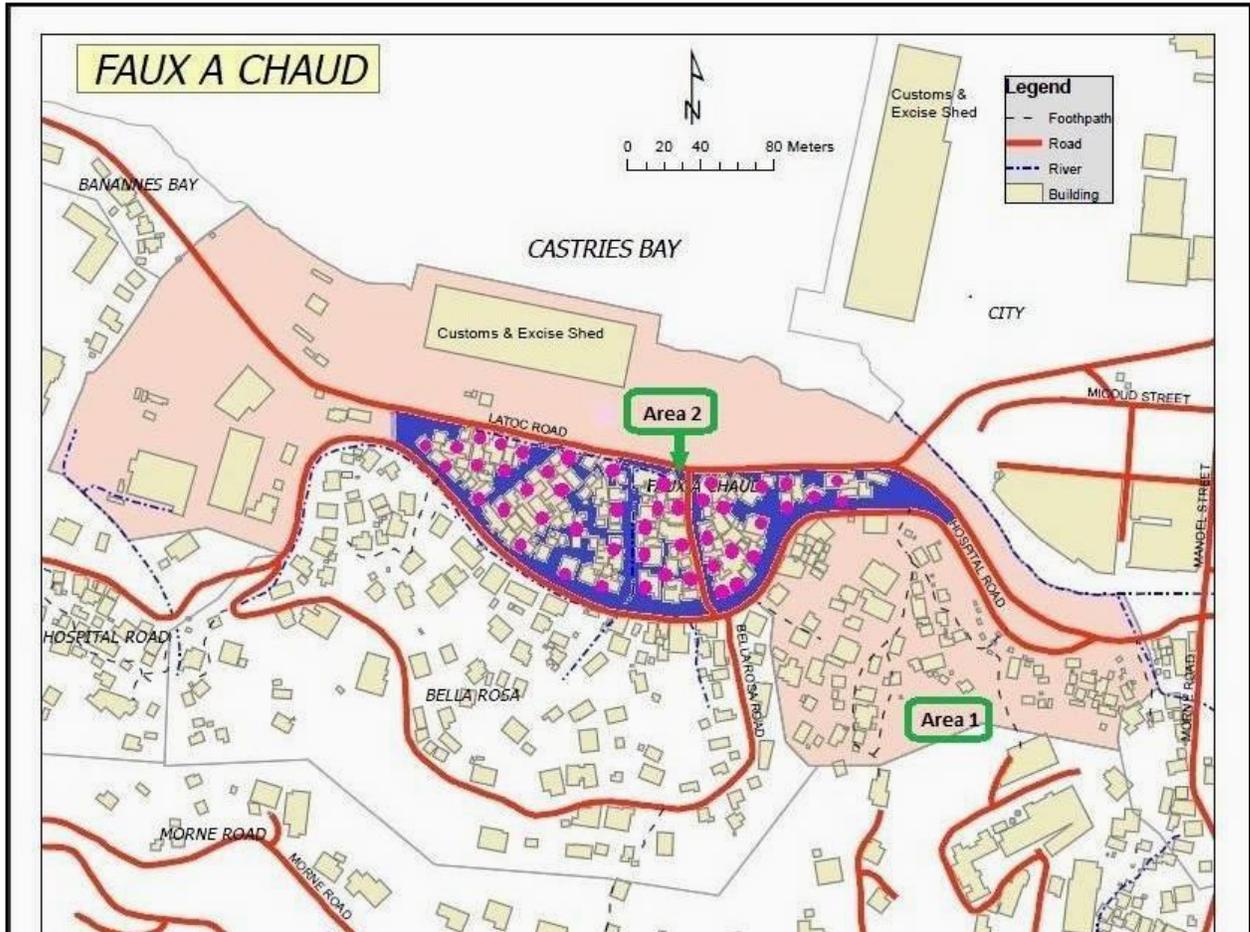
Criteria Community	Urban poverty characteristics	Castries urban boundary	SLSWMA ties	Safe
Conway	X	X	X	X
Ciceron		X	X	X
Marchand	X	X		
Faux-a-Chaud	X	X	X	X
Wilton’s Yard	X	X		
Baron’s Drive		X		
Park Estate	X	X		

*Note: The X represents a positive fulfillment of the specified criteria.

Although both the community of Conway and Faux-a-Chaud fulfilled all the requirements, upon further deliberations with personnel at the SLSWMA, it was advised that Faux-a-Chaud would be the better choice given that it is more organized than the community of Conway, (E. Jean personal communication 2011). As such, Faux-a-Chaud was chosen as the case study site.

The community of Faux-a-Chaud consists of approximately 134 households, in addition to an industrial park and the Wharf. See Figure 4A. However, closer examination of the community reveals two separate residential areas. The first area occupies a sparsely populated hillside along Hospital Road, while the second area - which is sequestered between Hospital Road and the La Toc main road - consists of the majority of homes within the community. Moreover, this second area is generally perceived as a “slum” or “ghetto” area due to the overcrowded nature of the homes, and the high level of degradation of the physical environment – characteristic of an urban poor community. This second area is also perceived to be the core from which all social ills associated with the community emanate (E. Jean, personal communication 2011, p.3). As a result, the entire community of Faux-a-Chaud is actually perceived to be this second area only, and its negative reputation has caused those living on the hillside to deny any kind of association with the community. Locally, the hillside area is differentiated by name among the residents from the greater Faux-a-Chaud area.

4-A: Boundary Map Denoting the Community of Faux-a-Chaud



Source: Central Statistics Office, Castries, Saint Lucia.

In order to select a sample from the community it was necessary to identify the study area boundaries. The boundaries for the sample frame were established around the second residential area; however, there were no official records of the number of housing units within this area. The sample frame could not be established using addresses since listed mailing addresses are postal office addresses, while phone numbers and electoral lists may exclude persons who are using illegal phone lines or squatting un-registered. Moreover, using such incomplete lists would have introduced bias into the sampling frame by explicitly excluding those persons who are un-registered squatters for example. As such, the researcher and her guide spent three days during

the first two weeks of June walking through the community, establishing a map of the area that identified every household. There are a total of 117 households in this area, making up the sampling frame, of which 47 were surveyed. A sample interval of 2 was chosen to ensure that each household had an equal chance of being surveyed, and to ensure that the households were surveyed throughout the study boundary as opposed to being clustered in one geographic area.

4.2.2. Survey Procedure: Implementation

4.2.2.1 Sourcing a Guide

In order to gain access to the community and maneuver among the households safely and freely, it was felt that a guide should be found to take the researcher around the community. Moreover, a guide who was a respected member of the community would be a positive attribute with regards to establishing a more personal rapport with residents, making them more inclined to participate in the survey. Mr. C. King was identified as an ideal guide based on a suggestion from the acting Deputy-Director of Social Transformation. Moreover, given his position as community leader and President of the Faux-a-Chaud Development Committee, it was felt that he was in the most appropriate position to assist the researcher. Moreover, after contacting Mr. C. King and engaging in several conversations to understand his relationship with the community, it was clear that he had a very positive rapport with the residents, and this would be very helpful when attempting to administer the survey. Mr. C. King was born and raised in the community, and was a resident until one year ago (2010), when he left to be closer to his daughter who did not reside in the community. Nevertheless, he still frequented the community regularly for both personal and professional reasons, that is, to help take care of his grandmother who still resided in the community, as well as visit his brothers

who remained there. Mr. C. King also frequented the community to attend meetings with the Development Committee and carry out other responsibilities associated with his position as President, (C. King personal communication 2011). Mr. C. King agreed to accompany the researcher into the community after working hours and on weekends, based on his availability, given that he worked full-time as well.

4.2.2.2 Implementation of Research Tools

The surveys were administered between Saturday, June 18th and Tuesday, July 5th. On weekdays, the researcher entered the community with her guide from 4:30pm to 7pm, while on weekends the surveys were administered from 9am until 3pm. The guide went to each household first and introduced the researcher and her survey. Once the resident agreed to participate in the survey, the researcher recorded the reading of the verbal consent transcript and the participant giving consent. Thereafter, the recorder was turned off and the survey was administered verbally by the researcher. Any additional information that was provided by the participant during the surveying process and was deemed pertinent to the research at hand, but had not been addressed in the survey, was taken note of by the researcher on the survey form. Each survey form on which the respondents' answers were recorded were labeled by household number and survey number, for easy identification later on while maintaining the respondents' anonymity. For example, a survey respondent was identified as "household # 3, survey # 2" on the corresponding survey form. Each survey took approximately 30 minutes to complete.

In order to minimize introducing bias into the survey research, every effort was made to secure a high rate of participation. Based on the guide's local knowledge, the researcher recognized that there would be a possibility that some residents would not be

home during the time of the survey. As such, a procedure was developed to minimize this reality. The procedure entailed selecting the housing unit located directly next to a non-responsive household, and then resuming the original sampling interval. For example, if household number 4 was meant to be sampled, but there was no response or persons declined to participate, then household number 5 would be sampled. Once a response was achieved then the sample interval (every other house) would resume meaning that household number 7 would be the next to be sampled.

4.2.3. Survey Design

The local language and verbiage, and well as the literacy of respondents were two factors that guided the formulation of the survey questions. Although the researcher had the advantage of being a local and therefore adept with the island's colloquialism, it was imperative that the researcher strike a balance in using language that respondents were familiar with, without sacrificing the meaning of the question as it related to the topic at hand. In order to observe the strengths and weaknesses of the survey design and ensure that it would function as intended in achieving the objectives of this study, the researcher piloted the survey prior to its full-scale implementation. The researcher field-tested the survey by going into the community of Faux-a-Chaud - with a temporary guide provided by the After-school Programme - and randomly selected three residents above the age of 19 to whom the surveys were administered. The components of the survey tested included survey length, language, content and responses, data collection methods and data processing. The field test was conducted on Tuesday June 14th, 2011 in the study area.

The field test revealed a number of deficiencies in the survey design. One of the three respondents communicated primarily in the local language of Patois and as a

result the guide needed to translate some of the questions. The researcher decided that it would be diligent to pose a question in the demography section that specified language of preference. Moreover, the questions on health, living conditions and land tenure were discarded due to the redundancy in information they provided when contrasted with the Census data. The researcher also decided to include a question on residents' vision for the community as a means of gauging the issues of most pressing concern and identifying what residents' saw as potential solutions. Finally, it was decided that visual aids should be used when asking respondents if they would be willing to participate in a resource recovery programme. Although the respondents understood the concept once it had been explained, it was felt that they still had some difficulty in visualizing the possibilities of products that could be created for sale.

The revised survey consisted of 31 questions and took approximately 20 to 30 minutes to answer. The survey was divided into four main sections: demography, household waste practices, willingness to participate and community information with a number of sub-themes such as environmental health concerns, knowledge, and interest in various resource recovery strategies. To view the revised version of the survey with the visual aids, see Appendix D.

4.3 Direct and Participant Observation

The researcher immersed herself within the field for a prolonged period of time, employing both direct and participant observation as methodological tools to gain greater insight into the social fabric of the community, as well as the residents' relationship to their physical environment. The participant observation consisted of engaging in dialogue about the community with the guide, Mr. C. King and Mr. G. Butte.

The researcher sought their consent prior to any discussions, and they agreed to have their real names used in the study. A transcript introducing the researcher and her work was read and consent was given by the participants, all of which was tape recorded. However, the actual conversations were recorded by hand. Unlike Mr. C. King, Mr. G. Butte is not from Faux-a-Chaud as delineated by the Census boundary map; he lived on the hillside parallel to the “ghetto” area though nevertheless considered Faux-a-Chaud as part of his community. Both individuals provided different and valuable insight into the nature and working of the community and its residents.

The direct observation consisted of taking photographs (by the researcher) of the physical environment of the community. Consent to take photographs of the surrounding area was sought from those who participated in the survey, as part of the official consent process. Photographs with persons were strictly avoided. Field notes were also taken based on observations made while taking the photographs. The goal of the direct observation was to provide visual representations of the phenomena under study and supplement the results from the survey and participant observation, to ensure that the narrative being told was as representative as possible of the actual lived experience of the participants.

4.4 In-depth Informant Interviews

These interviews were conducted with four representatives from various fields that were identified as potential stakeholders in a resource recovery programme in the urban poor community of Faux-a-Chaud. They also represented three levels of governance: regional (Eastern Caribbean), national (Saint Lucia), and local (community of Faux-a-Chaud). The representatives provided qualitative information on topics such

as: a description of the current national, city and local (Faux-a-Chaud) solid waste management system; Faux-a-Chaud as an urban poor community; governance and the country's institutional capacity; as well as challenges and opportunities that may influence the development and success of a resource recovery programme; and current poverty reduction approaches being utilized. The interviewees represented the Community Services Unit (CSU) within the Ministry of Social Transformation, Human Development and Youth and Sports, the SLSWMA, SSDF and the OECS' Environmental and Sustainable Development Unit (ESDU).

The Units, Fund and the Authority were specifically targeted due to their relevance to the research topic, and the potential role each organization may play in supporting the RRP should it be established. The relevant representatives were sought out directly, that is, the researcher went to every location and asked to speak to whomever was most qualified to answer questions regarding the research topic. The researcher was then introduced to the relevant personnel and an appointment was set up for the interview. The interview questions were emailed to the respondent prior to the interview. The verbal consent procedure asked for their permission to be audio recorded in person, and the use of direct quotations attributed to only the interviewee in the final research paper as well as any other publications that may come forth from the research paper. Anonymity was offered but all of the representatives agreed to have their real names published in the study. The interviews were semi-structured and intended to gain a precise understanding of the role of each entity, as well as elicit from the participants their opinions and perspectives on the research topic. The interviews lasted between 30 minutes to one hour. A general template of the interview questions may be found in Appendix E.

4.5 Data Analysis

Once social scientific research has been conducted, the data collected must be examined and analysed using specific techniques and procedures that bring order and give meaning to the mass of qualitative or quantitative data, (Babbie & Benaquisto 2010). Once the researcher has computed the data, it can be placed in the context of earlier theoretical and logical discussions. The interview transcripts, survey spreadsheets, field notes, pictures and documents together, provided an organized set of data for analysis. Given the nature of the data collected, a multi-method approach was used to discern patterns, relationships and underlying meaning from the data. Using this approach also helped validate the conclusions drawn at the end of the study, (Cook 2005). These techniques included coding and memoing, and univariate analysis.

4.5.1. Coding, Memoing and Theme Creation

The procedures and processes for analyzing qualitative data oscillates between coding and interpretation, (Babbie & Benaquisto 2010, p.393). The creation of analytic concepts or codes depends on the nature of the topic being studied and what can be deduced from the observations. Ultimately, the researcher's interpretation of the data dictates the emergent themes and leads to the creation of a theory (Bryman et al 2009). However, becoming so intimately connected to one's data during this process raises the issue of "maintaining a balance between objectivity and sensitivity," (Babbie & Benaquisto 2010, p.326). Every research method has particular strengths and weaknesses, therefore one must be very conscious of research findings simply reflecting the method of inquiry.

The interview transcripts, field notes and open-ended questions from the survey were coded for analysis. Once reviewed the content was broken down into component

parts based on common themes and labeled accordingly, (Bryman et al 2009). The qualitative data was coded manually according to themes generated by the researcher prior to the data collection process. These themes were: governance, environmental health concerns, the recycling industry, and the resource recovery programme, urban poverty, and community capacity. However, during the review of the information more themes emerged which were then added to the coding scheme, while others were merged or removed completely. Although the researcher created a coding system at the beginning of the project, it was continually being modified throughout the research process as new topics appeared to become relevant. Once the ideas, themes and potential relationships were identified, further insights and elaboration took place through memoing.

The interview transcripts were coded manually by the researcher. A coding scheme had been devised prior to the interviews based on the topics set to be covered in the interviews and survey. Most of the initial codes noted above were retained though several were further refined to include sub-themes. Under “governance” there was now regional, national and local governance, and government finances. The theme “Faux-a-Chaud community profile” emerged as each interviewee provided descriptions and perceptions of the community of Faux-a-Chaud as an urban poor area, while community capacity became a sub-theme of this. The theme “recycling industry”, interviewees provided valuable information that looked beyond the limits of commercial recycling. The theme of “poverty” was removed since it cut across many of the other themes. Excerpts from various interviews that reflected particular themes were collected and assembled according to the relevant theme. By combining this with the relevant memos field notes and photographs (if applicable), specific codes or themes could be accessed with all pertinent information immediately available. Once each theme was properly

represented, the researcher was then able to identify ideas or opinions that were repeated. These were recorded for their content and frequency as well as their dissonance or agreement to the norm.

4.5.2. Quantitative Analysis

Quantitative analysis is the “numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect”, (Babbie & Benaquisto 2010, p.409). This method of data analysis was used primarily for extrapolating meaning from the household surveys. The first step in this process required the transformation of data into numeric form. In the survey, some of the information collected was already numerical from the start, such as age and income and therefore without the need for transformation. However, the rest of the question responses needed to be coded and transformed into numerical values.

Similar to content analysis, the task here is “to reduce a wide variety of idiosyncratic items of information to a more limited set of attributes composing a variable”, (Babbie & Benaquisto 2010, p.410). For example, the question on Employment status was coded according to employed and unemployed, and numerical values were based on the number of persons either employed or not. Employment was also coded according to the different sectors of the economy in which respondents were employed. The coding schemes were developed based on the most appropriate categories given the researcher’s purpose and theoretical concepts. The coding scheme also took into consideration the existing coding scheme used by the Saint Lucia Census Bureau and the Saint Lucia Country Poverty Assessment Report 2005/06, for comparability in research findings.

The transformed survey data was imported into an Excel spreadsheet where the findings were tabulated. Much of the data was subject to solely univariate analysis due to the overwhelmingly homogenous nature of the findings. That is, demographic attributes could not be correlated to respondents' waste management behaviour, attitudes, concern or willingness to participate in the RRP despite the heterogeneous make-up of respondents in terms of age groups, gender, employment status, poverty status and education. It was difficult to find patterns or relationships that supported further bivariate or multivariate analysis with regard to household waste practices, knowledge and concerns, and willingness to participate in waste recovery strategies including a resource recovery programme.

4.6 Ethical Considerations

There are always ethical concerns whenever research involving human participants is proposed, even more so when the participants are of a marginalized group. Such concerns include accessing this marginalized community, ensuring confidentiality and anonymity of survey respondents, and guarding against the variety of potential harms that can come to human subjects. As such, in order to ensure that the researcher and research procedure followed a code of ethics and other guidelines, the project needed to be approved by the Simon Fraser University Research Ethics Board (REB). The project was approved in December 2010.

With regard to accessing the urban poor community, the researcher opted to find a respected member from the community under study to be her guide. The researcher found a guide who was well received and trusted by the community, which was a big

advantage for the researcher. Most residents were very open to participating in the survey once the initial introduction was made by the guide, Mr. C. King.

In order to ensure confidentiality, the verbal consent recordings for the survey participants were uploaded after each day of surveying, onto the researcher's password protected laptop. The anonymity of survey respondents was insured by beginning each conversation with an identification marker as stated earlier. The researcher sought verbal consent for this aspect of the data collection process due to the fact that literacy rates tend to be low among marginalized groups. As such, the researcher wanted to avoid potentially embarrassing a resident by asking them to read and sign a letter of consent, and thereby causing them to refuse participation.

The consent and interview recordings for the interviewees were also uploaded, and all relevant information was transcribed to a word document for coding and analysis. Although anonymity had been offered, all the interviewees and the participant observation respondents opted to be identified by name and title in the final research paper. The field notes taken during the participant and direct observation were transcribed into a word document as well based on relevance to the research topic, while all the photographs were uploaded onto the secured laptop and labeled. All participation for the survey, interviews and participant observation were voluntary. This was stressed not only by the researcher but also explicitly stated in the verbal consent transcript.

Furthermore, in order to ensure confidentiality all pertinent data collected was transferred onto a secure, password-protected memory stick that is being kept in a locked cabinet. All data will remain anonymous and confidential to the limit of the law. Hard copies of the data are being kept in a locked cabinet in a secured office, and all data will be destroyed after two years.

4.7 Limitations and Strengths

When the researcher enters the community in the role of a student enquiring about waste management practices, she must constantly ask herself some key questions as she records her impressions and observations in the field, (Cook 2005, p.180). Questions such as: does this piece of information contribute to my understanding of the individual's social-life? Is there adequate self-awareness and self exposure in the judgments being made? Is this experience affecting me and how? If the researcher can remain sensitive to these issues of bias, and recognize when she is projecting her own assumptions into her observations and interactions for example, then the quality of data collected will be that much more robust in its findings.

The researcher has the advantage of being a local Saint Lucian who can relate to the participants she was seeking to study. Using her local knowledge and experience, the researcher was confident that members of this community would be open to sharing their story and thus participate in the study. Overall, most of the respondents were keen on participating in the survey, with some residents even asking if they could participate. However, the researcher was also aware that her social status, which would be perceived from her skin complexion and manner of speaking, may impact the respondent. The respondent may feel an intrinsic pressure to respond in a way they believe the researcher wants them to respond, which may not reflect the truth. According to Bertrand and Mullainathan (2001), the interactive nature of the survey procedure plays a large role in shaping the responses to subjective questioning where the respondents want to avoid looking bad in front of the interviewer. As such, the researcher made a concerted effort to engage informally with residents of the community. During the surveying process, the researcher expressly asked respondents

before commencing the survey to be as honest as possible in their responses, that she, the researcher was not here to judge respondents but rather was interested in their opinions and concerns as it related to the research topic.

Moreover, the survey depended on self-reported information, which assumes that the respondent gave truthful and accurate responses. A significant portion of the survey involved subjective questioning where the questions asked for the respondent's opinion and level of concern. Bertrand and Mullainathan (2001) propose that the most pernicious problem with subjective questioning is the possibility that attitudes may not 'exist' in a coherent form. In order to increase the survey's credibility, the survey was prefaced with an introduction explaining its purpose and how the responses would be used by the researcher. Overall, the questionnaires had low rates of no response to the subjective questions.

5 Data Results and Analysis

5.1 Faux-a-Chaud Household Survey Results

This section presents the data results in accordance with the four sections of the survey: demography, household waste management practices, willingness to participate and community information.

5.1.1. Demographic Data

This section denotes some basic characteristics of the 47 persons who responded to the survey.

The most frequently represented age range was 40 to 44 years old at 19.2%, followed by the 30 to 34 age range at 17.0%, and the 25 to 29 age range at 12.8%, while the male to female ratio was approximately 40:60 percent respectively. See Appendix F-1. Of the respondents, approximately 2/3 (32) consider themselves the head of the household. A little over half the respondents (26) live in a home with a family size between one to three persons; approximately one third (17) with a family size between four and six persons; and only 4 living in a home with seven or more persons. See Appendix F-2. Nearly half of the respondents (23) were born and raised in the community, while the rest (24) moved into the community at various points in their lives and for varying reasons. See Appendix F-3. Of the 24 respondents who migrated into the community of Faux-a-Chaud, the predominant reasons for moving were shared between family (29.2%) and searching for better opportunities (29.2%); while of the 21 respondents for whom the data was available, half moved from a rural area and the

other half moved from urban areas. See Appendix F-4. Moreover, contrary to the literature, respondents who migrated into the community have been residing there on average twenty one years, thus making the community a rather stable one versus the perception of instability due to the notion of a transient population deemed to occupy residency there. This was an assumption shared by many of authorities interviewed.

The vast majority of respondents (45) are literate, although 2/3 may be said to have very basic literacy abilities. See Table 5A Below. This corresponds with the education data where 43% of respondents have only a primary school education, while 38.3% have a secondary education of which approximately 1/3 have not completed their studies. See Appendix F-5. Despite the limited literacy skills of the respondents, 76.6% are employed, while 23.4% are unemployed, the primary reason being the lack of employment opportunities (63.64%).

5-A: Table Denoting the Literacy Capabilities of Survey Respondents

		Frequency	Percent
Illiterate		1	2.1
	Sign only	0	0.0
Read only		1	2.1
	Basic	32	71.1
Literate	Advanced	13	28.9
		45	95.8
Total		47	100.0

In comparison to the national unemployment average of approximately 20%, FAC denotes a slightly elevated unemployment rate. Interestingly enough, the unemployed consisted of only females (11), of whom 7 lived above the poverty line and 4 lived below. See Appendix F-7. At first glance, this may indicate a gender bias in availability of

employment opportunities for females from the community, however further research and analysis would be required to confirm or nullify such a statement. Furthermore, 3/4 of respondents reported being above the poverty line of EC\$423.83 (USD\$155.48), while the remaining 1/4 fell below the poverty line. See Table 5B below.

5-B; Table Denoting the Employment and Poverty (based on monthly income) Status' of Survey Respondents

		Frequency	Percentage
Total		47	100.0
Employment status			
Employed	Formal	25	96.2
	Informal	26	55.3
Self employed	Formal	4	40.0
	Informal	10	21.3
Seasonal		0	0.0
Unemployed		11	23.4
Total		47	100.0
Monthly Income			
Above poverty line (EC\$423.83)		33	70.2
Below poverty line (EC\$423.83)		11	23.4
Not sure		3	6.4
Total		47	100.0

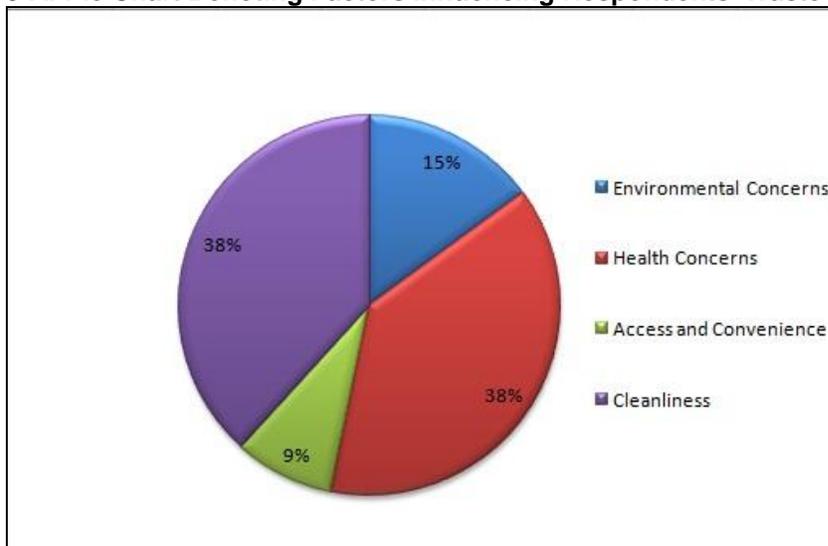
5.1.2. Household Waste Management Practices

This section identified the manner in which respondents dealt with their household

waste, factors which influence their behaviour, and perceptions concerning various waste related issues.

The majority of respondents (53.2%) stored their garbage in plastic bags, which were sometimes kept in buckets outside of the home until disposal into the communal garbage dump. The remainder of respondents were almost evenly split between storing their garbage in a closed container directly (25.5%) and storing it in an open container (21.3%). See Appendix F-9. Once the various storage instruments were full, all respondents brought their garbage to the communal dump for disposal. Respondents' waste management practices were most influenced by environmental health concerns (38%) and maintaining a clean and attractive household (38%). Only 15% of respondents were motivated by pollution and other environmental concerns. See Figure 5A below.

5-A: Pie Chart Denoting Factors Influencing Respondents' Waste Management Practices



With regard to other waste management issues, all respondents were concerned about garbage polluting the river and other water ways in the community, as well as flooding due to garbage blocking drains and gullies. Almost 3/5 of respondents (27) were concerned about the regularity of garbage collection services in the community,

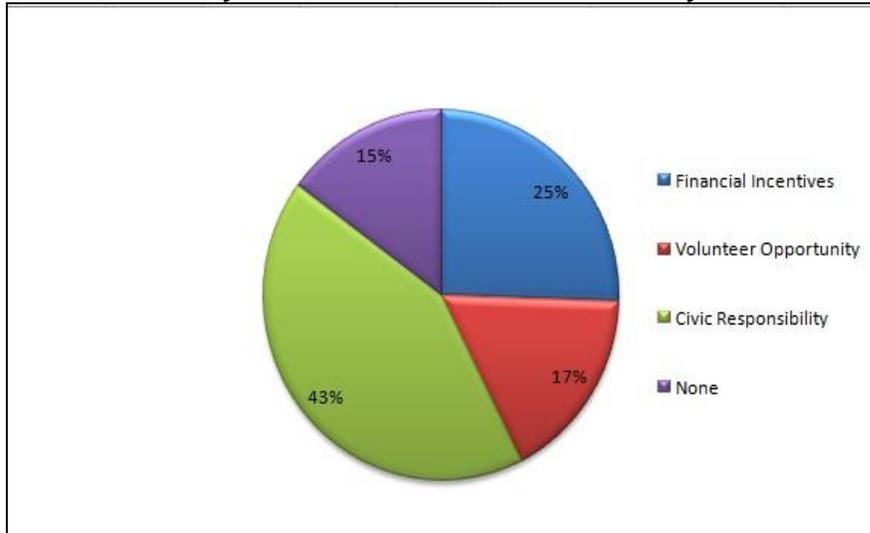
while the remaining 2/5 of respondents (18) felt that service was frequent enough and therefore not a concern. See Appendix F-11. Most respondents were also concerned about litter in the community (38 persons), the presence of rats and other pests in the area (43 persons), and the health risks associated with the unsanitary conditions of the communal bin (43 persons). See Appendix F-11. Lastly, although a strong majority (72.3%) of respondents were concerned about the lack of recycling and recovery options in the community, 10.6% were not concerned, while 17.0% had no opinion about the issue. See Appendix F-11.

5.1.3. Willingness to Participate in a Resource Recovery Programme

This section attempts to determine respondents' interest in participating in the various aspects of a resource recovery programme, should one be developed in the community.

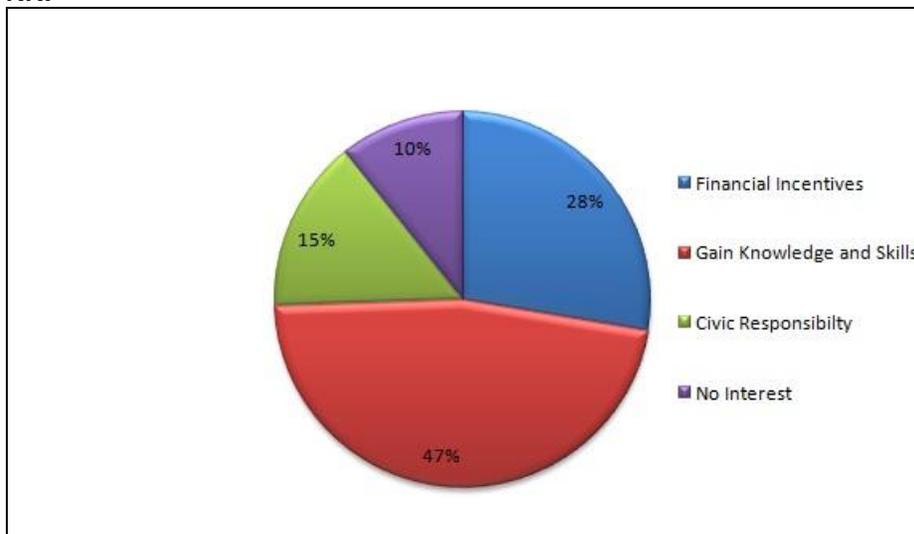
Although the vast majority of respondents (93.69%) were familiar with the term "recovery", only 36.17% were as familiar with the term "composting". However, once these terms were defined, the majority of respondents (over 90%) were not only interested in receiving additional information about the types of waste they could compost and recover, but they were also willing to separate their own household waste, and believed that such practices would have a positive effect on the garbage situation in the community. See Appendices F-13, 14 & 15. In addition, 89.40% of respondents were interested in composting to be used to create a community garden. See Appendix F-16. Moreover, for 43% of respondents, the primary motivating factor for collecting recyclable waste materials from around the community in order to keep a clean environment was civic responsibility. See Figure 5B below.

5-B: Pie Chart Denoting Factors Motivating Respondents' Willingness to Participate in the Collection of Recyclable Materials from the Community



With regards to the resource recovery programme, forty-two of the forty-seven respondents were interested in participating and being trained to produce sellable products from the recovered waste materials in their community. See Appendix F-17. For 47% of respondents, the primary motivating factor to participate in the RRP is to gain knowledge and skills. This is denoted below in Figure 5C.

5-C: Pie Chart Denoting Factors Influencing Respondents' Interest to Participate in the RRP



5.1.4. Community Information

This section attempts to gather characteristics of the community in terms of the respondents' vision for the area, the presence of solidarity or lack thereof, organizations operating in the area and their impact on the community.

Of the households surveyed, 85.4% (41 persons) were aware of one programme currently operating within the community, the After-school programme, while only one of the 41 respondents was aware of the existence of the Faux-a-Chaud Development Committee. However, 40 of these respondents agreed that the After-school programme was a success since it kept the children in the area occupied, imparted knowledge and skills, and empowered them. See Appendix F-18 and 19.

When asked about their vision for the community, the overriding consensus was a need for adult and youth training programmes (30.3%), as well as better housing, infrastructure and basic services (29.0%), such as: better waste management facilities that are cleaner and properly enclosed. See Appendix F-20. As such, over 90% of respondents believed that the resource recovery programme would fit well into their vision for the community, specifically by aiding in the waste management problem. See Appendix F-21.

5.2 Analysis and Discussion of the Survey Results

The community of Faux-a-Chaud is recognized as an urban poor community, however - according to the St. Lucia Country Poverty Assessment Report, which determined the economic indicator of poverty (poverty line) at EC\$423.83 (USD\$154.71) per month - the overwhelming majority of survey respondents' stated monthly incomes above this amount (70.21%). Similarly, over ¾ of survey respondents are employed; and of the eleven respondents who are unemployed, only four are living below the

poverty line. As such, it appears that most of the survey respondents are gaining an adequate income to sustain their consumption requirements and are therefore not food poor. In referencing the literature, Mitlin and Satterthwaite's (2003) idea of the eight interrelated deprivations that are characteristic of urban poor communities - of which inadequate income is only one facet - allows one to infer that despite the lack of food poverty among the majority of respondents, there are other social and economic externalities at play that are keeping the community entrenched in poverty.

Further examination of the occupations held by the survey respondents reveals an important facet to this complex poverty issue. Many survey respondents were employed at entry level positions with low educational requirements, such as secretaries, sales clerks, messengers, and in various trades (e.g. baker) without any kind of official training. Several others were employed in sectors that are seasonal such as hospitality (e.g. hotel staff), or self-employed with businesses equally precarious due to their dependence on a stable economy. As such, one may infer that the low educational level and basic literacy skills of the respondents has created a glass ceiling of sorts, in terms of the types of jobs they qualify for and may attain, thus equally limiting their income bracket. Moreover, this glass ceiling is especially evident among females given that they represent the total number of unemployed survey respondents, despite having higher education levels than their male counterparts thus revealing the gendered nature of poverty. This supported national statistics which identify the unemployment rate between men and women to be 19% and 22% respectively. Not only do women experience higher unemployment rates than men, but also higher rates than the national average of 20.6%, (2010 Housing and Population Census). The data produced through this survey however, is insufficient to fully explain and understand the gendered nature of poverty; the differences in how males and females experience, are affected by, and

cope with poverty. With regard to the other aspects of the survey, there were no marked differences in response for men and women. Furthermore, although most of the respondents do attain an adequate income to remain above the poverty line, it remains insufficient for respondents to deal with the multiple deprivations they face personally (e.g. inadequate education and literacy skills) and within the community (e.g. overcrowding, inadequate waste disposal options).

In addition, according to respondents' vision for the community, it is evident that income generating opportunities are not a primary concern. In fact, the main areas of concern for respondents - in accordance to Mitlin and Satterthwaite's (2003) eight interrelated deprivations - are namely: inadequate shelter (overcrowding; poor housing quality), see Figure 5D; inadequate basic services (poor waste management in terms of the communal dump, litter and pollution), see Figure 5E; inadequate infrastructure (poor drainage throughout the community), see Figure 5F; and an inadequate asset base (lack of youth and adult literacy and training programs).

5-D: Photograph Denoting the Overcrowded Study Area



Source: Laura John (researcher). Personal photographs taken for study on July 1st, 2011.

5-E: Photograph Denoting the Unsanitary Condition of the Communal Skip and Surrounding Area



Source: Laura John (researcher). Personal photographs of study area retrieved on July 5th, 2011.

5-F: Photograph Denoting Poor Drainage and Infrastructure



Source: Laurah John (researcher). Personal photographs taken for study, on June 26th, 2011.

Direct observation of the conditions - presented here by the photographs taken by the researcher - denote the physical deprivations found throughout the entire community, which indicate a presence of biological (e.g. potential for disease vectors) and physical (e.g. overcrowding as potential safety concern) environmental hazards.

Given the spatial location of the community, which is bounded on either side by roadways that experience frequent vehicular traffic, residents are constantly exposed to outdoor air pollution (e.g. of chemical hazards) such as motor car emissions, which can cause respiratory illnesses. See Figure 5G below.

5-G: Photograph Denoting Residents' Exposure to Harmful Motor Vehicle Emissions



Source: Laura John (researcher). Personal photographs taken for study, on September 18th, 2011.

According to the 2010 Census data, there are nine persons in the Faux-a-Chaud area who suffer from asthma. Moreover, the river which runs through the community, the poor network of drains, and the communal dump, are prime locations for spawning disease vectors such as mosquitoes, which are known to carry the Dengue virus, and Leptospirosis transmitted by rats and other infected mammals. As of January 2011, the Ministry of Health issued a warning concerning the above normal occurrences of these illnesses which the island is experiencing, (Ministry of Health, public address, January

31st, 2011). Although there were no health indicators related to the Dengue virus and Leptospirosis available for the community of FAC specifically, the number of Dengue Fever and Leptospirosis cases for the Castries basin (city and suburban area) represented 35.1% and 21.4% of all reported cases, respectively, (Department of Environmental Health 2011). This is a significant number given that these two areas alone represent a total population of approximately 20,000 people, and also fails to take into account estimations of unreported cases. As such, one may deduce that there is a higher prevalence of the Dengue virus and Leptospirosis in the Castries basin, where communities like FAC are located.

Another environmental hazard observed in the community is the overcrowding of homes coupled with the poor quality of the structures that poses a threat of injury to residents who must navigate the narrow corridors between houses on a daily basis. Figure 5H below. It is difficult to denote the prevalence of injuries associated with structural threats simply because such details are not well documented, particularly on a community by community basis. Moreover, persons from poor communities such as FAC are reluctant to seek medical attention for injuries and illnesses due to the cost associated with such visits and the high likelihood that they do not have medical insurance.

5-H: Photograph Denoting the Poor Structural Quality of Homes and Alleyways



Source: Laura John (researcher). Personal photographs taken for study, on September 18th, 2011.

By recognizing the multi-dimensional nature of urban poverty, global initiatives such as Agenda 21, the 1995 World Summit, and the 2000 MDGs emphasize the need for poverty reduction strategies that focus on better public services such as waste management, coupled with measures to empower the poor (particularly women) through more secure employment, and asset-building programmes to address specific weaknesses such as low-skills and low literacy rates. Despite the limited research on the gendered nature of poverty, the survey results clearly indicated that women in the community were at a disadvantage with regard to securing employment opportunities, despite having higher educational levels than their male counterparts. Furthermore, given the realities of Saint Lucia's economic and physical vulnerability, and limited

resource base, coupled with the physical conditions and environmental hazards which exist in Faux-a-Chaud, the lack of basic services and infrastructure, yet its stability as a long-term residential settlement, this community would be an ideal place for the establishment of a resource recovery programme. The resource recovery programme could improve the waste management capacity of the community by recovering value in the same waste that now litters the river and drains, provide secure jobs, improve the living conditions of the residents, and contribute to environmental sustainability.

The survey results demonstrate overwhelming support for the establishment of a RRP within the community, as well as interest in participation at the various levels. Survey respondents willing to participate in the resource recovery programme cut across all demographic categories of age, gender, education, employment status, poverty level and origin. This high level of interest demonstrates an optimism and eagerness among respondents to participate in a programme, which they have understood as important to their personal development as well as that of their community. This is supported by the fact that close to 50% of respondents were primarily motivated by the idea of gaining knowledge and skills through the programme. One may infer that these respondents are aware of their minimal asset base and make a direct correlation between that and their condition of poverty. As a result, they may identify the RRP as a means of ameliorating their condition by building their asset base, which will make them more marketable. Moreover, almost 15% of respondents were primarily motivated by their own civic responsibility to keep their community clean and safe, thereby identifying the RRP as a means by which they could accomplish this. Another 27% were highly motivated by the income earning opportunity presented by the RRP, denoting the need for a secure and better paying job given that most of these respondents are already employed.

Noting the high level of interest among respondents, it appears vitally important to involve the residents in laying the groundwork for their potential future participation in the long-term development of their own communities. Quick impact projects from the top-down may meet the urgent needs of the poor, however, they fail to address the core issues which are then allowed to fester and exacerbate the problem. As such, the intended beneficiaries become increasingly apathetic and wary of social intervention schemes. The suspicion of government-led interventions was apparent during the research project as the guide had to emphasize that the survey was for a school project and not government related, in order for persons to be willing to participate. Nevertheless, the interest of residents in the programme suggests that the issues being addressed through this project resonate with the self-identified goals of many of the residents. This simple recognition is fundamental to the ideas of sustainable community development that emphasize opportunities for self-identification, self-responsibility, and self-actualization of community goals, and community control in the decision-making process, (Nozick 1993; Wint 2002, p.89; Shultz 2003).

Therefore, if community development efforts such as the RRP are to be most effective, then the people need to be actively involved so that they feel like the project is theirs. Sustainable community developments requires community participation and leadership; as Wint noted, it "...places the onus of development on the community and the individual within that community", (2002, p.89). As such, the success of the programme is dependent on the ability to mobilize people's interest into concrete and continued action. This sense of ownership is a real sign that these efforts matter to local people – because they themselves are creating the changes that they value most. The high level of interest already demonstrated by respondents denotes the potential for a

successful, community-led development programme, should it be pursued. However, it is recognized that there are many other factors which need be taken into consideration.

One such factor that stood out in the survey results was the overall lack of sense of community-based organizations or groups in Faux-a-Chaud, as well as the fact that only one person stated a desire for increased representation in their vision for the community. Although Faux-a-Chaud has had a Development Committee (FAC-DC) for close to ten years, the majority of residents were unaware of the Committee, who the members were, their function etc. This may be attributed to the fact that the members of the Committee were not elected but rather were specifically targeted by the STO at the time, to take part in the Committee. These members were persons from the community who were viewed as having the capacity to carry out the functions of the Development Committee, (C. King, personal communication 2011). However, this informal method of inviting particular persons onboard has continued, and today, the FAC-DC consists of approximately four core members, who coincidentally no longer reside in the community. As such, there is no public or participatory method of engaging the entire community in choosing their own representatives for the Committee and thus the dissemination of information about the Committee and its mission remains limited, while residents are not given the opportunity to contribute to their community's development. Moreover, given that most of the Committee members do not frequent the community regularly, except for occasional DC meetings, residents do not have the opportunity to interact with them, learn about the various activities being organized etc. As a result of this, residents have come to associate certain activities with particular individuals, as opposed to recognizing the Development Committee as the responsible group. For example, when the Development Committee organized a karaoke event as a fun activity for the community, persons were under the impression that this was being held by Mr. C. King due to his

consistent presence in the community and involvement in the planning process. However, Mr. C. King argues that residents have generally shown little interest in the Committee and the various activities they have organized. For example, a Life-Skills workshop that was sponsored by SSDF a few years ago, and facilitated by the DC received very little attention and few participants from the community, (C. King personal communication 2011).

However, according to the Saint Lucia Country Poverty Assessment 2006, government institutions such as these development committees tend to implement interventions of the remedial and supportive type versus preventative and/or developmental type, (p. 110). Moreover, given that only one person surveyed was aware that this committee existed denotes its lack of felt presence and effectiveness within the community. As such, one may deduce that the lack of interest is associated with the sense of apathy felt by many in the community and the lack of 'worthwhile' activities being promoted by the Committee.

Furthermore, there is some division on the part of respondents concerning whether there is a strong sense of solidarity or community among residents; twenty respondents believe that there is, while twenty-seven respondents disagree. Based on the conclusions drawn above, the mixed responses on community solidarity may be attributed to two factors. Firstly, the stability of the community and average residency of families being approximately 20 years, it is likely that there is a sufficient level of dependence and social capital among residents that enables them to rely on their own, informal initiatives and relationships in addressing problems. On the other hand, the sense of apathy and disenchantment associated with the community and all the negative social issues that it represents, and the lack of meaningful interventions may be overwhelming some respondents, keeping them uninterested in participating in any

formal community groups. In fact, approximately four survey respondents relayed to the researcher that they were completely uninterested in engaging in anything that had to do with the community. They disliked living in the community, and limited their interaction with residents by going straight to work and back home on weekdays, and remaining indoors unless absolutely necessary to go outside. Such comments denote the depth of such negative feeling among residents.

Irrespective of the interpretation, it may be argued that the lack of community groups is a hindrance to community development since the residents are not afforded a forum to share ideas and guidelines for the type of community development they would like to see fostered. This also facilitates the fragmentation of the community by enabling oppositional groups (e.g. feuding families etc.) to avoid interaction and thus prevent the building of stronger bonds among all residents. Moreover, Church groups, youth and sports groups would give residents some political leverage to negotiate more support, without which they remain at the bottom end of a top-down policy instrument, receiving initiatives that may be ill-suited to deal with the issues specific to the community. Effective community development opens up the possibilities for people that might have remained unrealized otherwise.

5.3 Participant Observation

5.3.1. Participant number 1 - Gary Butte

Mr. G. Butte is a local Saint Lucian artist (painter) and former resident of the hillside overlooking the community of Faux-a-Chaud. After completing school, Mr. G. Butte decided to teach. However, worn out after several years of working within the education system, he left teaching to fulfill more personal goals. He sought to use his

passion for Art to address some of the pressing social issues he observed growing up in Faux-a-Chaud. Although the geographical location of his home leaves him outside the boundaries for this community, socially he has lived and grown up within FAC. One of the issues Mr. G. Butte hoped to address was the presence of children on the streets, largely unsupervised throughout the day. He envisioned an afterschool Art's Initiative programme that would engage these children and keep them off the streets, engender an appreciation for different art forms, while providing a structured and supervised activity in a positive, child-friendly environment.

In early 2009, Mr. G. Butte developed a business plan and approached the Ministry of Social Transformation for advice with regard to implementing such a programme. Although the Ministry already had a pilot programme under development, Gary handed in his plan that was already fully developed, and it received a positive response from Ministry officials. Although the Ministry of Social Transformation was already working on a national After-school Programme, they focused on implementing Mr. G. Butte's programme given that it was already complete. Mr. G. Butte worked alongside Velda Joseph in the Community Services Unit, and other Ministry officials who helped pioneer a proposal to secure funding from the OAS. By late 2009, the OAS granted US\$175,000 worth of funding to the Ministry for the implementation of the Arts Initiative Programme in Faux-a-Chaud, Mon Repos and Choisel. After the first year, the programme was expanded to include the Ministry's After-school programme, with a variety of classes ranging from life skills to academic support and sports. Mr. G. Butte's Arts Initiative idea was subsumed under this wider umbrella of activities with a similar but broader objective.

The After-school programme consists of five different classes: life-skills, information technology, dance and music, arts and crafts, and academic support. The

programme runs from Monday to Thursday from 4pm to 6pm and targets youth between the ages of eight to eighteen.

Mr. G. Butte stated that the programme initially began with approximately forty kids - representing approximately 89% of community children of that age - although this number has now declined to about twenty-six. However, given the type of community being targeted, a 35% decline over the four year operation of this programme may be considered a success. Mr. G. Butte explained that one of the primary reasons for the decline in participation is due to the structure of the programme. The programme requires the kids to participate in all its different aspects, and many of the older kids are not interested in Academic Support or Arts & Crafts, and simply want to take part in the dance or sports classes. As a result, they leave the programme altogether.

Mr. G. Butte works as a facilitator conducting the Arts and Crafts class for the programme, though he also continues to pursue his passion for painting. He recently launched an exhibition showcasing his latest work in Saint Lucia, and is also touring regionally and internationally for this exhibition. Gary Butte not only serves as a prime example for what is possible despite one's socio-economic background, but his resolve to give back to the community is precisely the type of resource that needs to be harnessed for the future development of the community.

5.3.2. Participant number 2 – Cuby King

Cuby king has lived in Faux-a-Chaud for most of his life; he left the community approximately one year ago in order to be closer to his daughter who lives in a different district, about a half an hour away. In 2004 he was invited to sit on a Development Committee by a gentleman from the area who was already on the Committee. From the first meeting he attended in 2004, it appeared that they were attempting to mobilize the

Committee to be more proactive in establishing development initiatives for the community of Faux-a-Chaud. Soon thereafter, the Ministry of Social Transformation sought to establish a Community Resource and Internet Centre (CORIC) in four communities around Saint Lucia, which had been flagged by the Saint Lucia Country Poverty Assessment Report 2006 as some of the poorest areas. It was seen as an opportunity to empower the people by giving them access to the resources necessary to learn computer skills, as well as access to the vast amounts of information on the internet that they could then learn from and incorporate to improve their own lives. The Development Committee in each respective community was responsible for these centres. One such centre was established in Faux-a-Chaud, however before this could be implemented the community centre needed to be refurbished since its condition at the time was insufficient for the programme to truly function as intended. The STO at the time suggested that the Development Committee submit a proposal to the Poverty Reduction Fund (PRF) to request assistance in this endeavour. The PRF agreed and the old community centre was renovated and expanded to create a community centre more conducive to housing an IT room as well as a general meeting place for the Development Committee and other community activities. The After-school Programme would later take up residence there in 2009.

Despite the many positive developments, there was growing tension between the FAC-DC and the CSU regarding responsibility of the equipment in the IT centre, and with the coordinators of the After-school programme, as well as internal challenges faced by each group. One of the main issues between the FAC-DC and the CSU centred around access to the centre; although the DC was responsible for the centre and kept the keys, community members who were involved in the After-school Programme as facilitators felt that they should have the keys since they used the centre

most often. Internally, the DC was limited in its ability to do more for the community due to the fact that the four members who constituted the Committee were working professionals, unable to dedicate the necessary time to achieving the committee's objectives and responsibilities. The time factor was further exacerbated by the fact that the Committee members no longer resided in the community and therefore had much more travelling to do in order to get to the meeting place at the community centre. Nevertheless, the members recognized the importance of the Committee for the community's development and tried to push themselves to participate despite time restrictions. On the other hand, it was felt by Mr. C. King that members of the community who had the free time to volunteer on such a committee or attend community meeting did not care and showed no interest in participating. Mr. C. King chalked it up to the lack of education and ambition of residents, and the fact that many seem satisfied with attaining a few material possessions, as opposed to advancing themselves. As such, the DC could never really get more persons onboard in order to accomplish specific goals such as sporting activities, cultural activities, the football club etc. As a result, the DC did what they could with their limited resources. Mr. C. King speculated that the reason why persons in the community denoted such a low level of interest in the Committee's work was due, in part, to the fact that the over the years the community had been promised a lot by government and various other agencies but for one reason or another things have never worked out. As such, persons have become disenchanted and apathetic to programmes, projects or committee's claiming to help the community. Currently, the FAC DC is defunct as the standing President, Mr. C. King refuses to work with the CSU after a very tumultuous interaction concerning the IT centre, thus leaving any development plans at a standstill.

For as long as he can remember, Faux-a-Chaud has had its bad name due to the delinquent behaviour of particular individuals. In the 1990s there was an emergence of several gangs within the Castries basin, including Faux-a-Chaud. Several infamous, criminal characters who resided in the community cast a negative light of the area. However, it was not within the community itself that violent criminal acts were taking place. In fact, one would hardly hear of killings within the community, though the negative stigma continues to reign. As such, the current stigmatization is really based on the actions of a notorious few who resided in the community during the height of the gang warfare. For the current level of criminal activity, it appears that persons are either leaving the community to commit their crimes or outsiders are coming into the community and perpetrating certain criminal acts. Nevertheless, Mr. C. King recognizes that there are many young persons in the community who are out of school or continue to go to school but do not take it seriously. Sometimes this is due to the lack of support and encouragement at home, or the lack of resources to send them to school often enough. As a result, those who are out of school adopt a particular lifestyle for survival which usually includes drug dealing, stealing, and break and entering. This in turn perpetuates the negative stigma associated with the community.

Another popular discourse surrounding the community also considered responsible for the “crime situation” and negative stigma is the view that Faux-a-Chaud is a transient community from a history of persons coming in from rural communities during the late 80s and early 90s. However, Mr. C. King dispels this notion by saying that the community itself is like “a big family” in that most persons are related. Furthermore, families in Faux-a-Chaud have been living there for several decades and even particular prominent families are known to have their roots in the community. Moreover, as he walks around the community, all the persons he encounters are people

he has known growing up, and the occupancy of their homes have remained relatively unchanged. In contrast to its reputation, Faux-a-Chaud is actually a very stable community in that regard. Mr. C. King emphasized that the problem with crime is really due to young people bringing their friends into the community. However, whether police records substantiate this claim would need to be researched.

When asked about his view as to whether or not persons in the community would participate in a resource recovery programme, although he recognized that many persons surveyed showed an interest and willingness, his experience suggests that this would not be the case. He believes that if persons are expected to maintain this behaviour then compensation will be required. When it comes to waste disposal, although there are many persons who will take the time to bring their garbage and throw it in the main communal bin, there are many more who will simply throw garbage into the river and surrounding drains. Mr. C. King claimed that even when cleaners sent by the Castries City Council to clean the river, often times little children will continue to throw their litter into the river without regard for the cleaning taking place. This is behaviour which has been learnt from their parents or other community members, and which denotes persons' attitudes towards waste management issues.

Moreover, Mr. C. King stressed several factors which may influence a person's interest in participating in the programme; factors such as their perception of their situation, spending habits, and desire for self-actualization for example. He stated that certain people did not perceive themselves as poor as perhaps described in the poverty assessment reports or as the poorest of the poor relative to others. While they are aware that they may not be able to afford everything, they do not feel the need to do more for themselves to change their situation. He feels that many persons do not see a world or life beyond Faux-a-Chaud. Speaking to people in the community, he says that

very few are actually working to get out of the area; due to the negative stigma already attached to the area, they do not believe that anything good will come to them. As a result, they do not aim to educate themselves and seek short-term gains instead. Although persons may be motivated to participate in the resource recovery programme due to the possibility of making money, there needs to be some way of tying their efforts in the waste segregation and collection process to the money-making aspect within a short space of time. If there is no quick reward for their efforts people will likely resort to their old behaviour because they are not seeing results. In his opinion, the only way such a programme would be successful is if the people are assisted every step of the way and there are regular checks being made to ensure that persons are doing what they are supposed to be doing, which would require a significant amount of manpower/human resources. So it is possible to run a successful programme, but it will require a significant commitment in both time and resources to carry out.

5.4 Interview Results

The interviews were conducted with four public servants, each representing various levels of governance: regional, national, and local. The names, titles, and organizations or government departments of the interviewees may be noted in the table below. See Table 5C. The interviews produced a wealth of information from which a myriad of themes emerged, and the interviews were coded based on these themes, the results of which are presented below. The five main themes that emerged from the interviews were: governance, environmental health concerns, FAC community profile, the recycling industry and the resource recovery programme.

5-C: List of Interviewees, Titles, Organizations, and Governance Levels

Agency	Department	Name of Respondent	Job Title	Governance Level
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Ministry of Social Transformation	Community Services Unit	Mrs. Joseph	Social Transformation Officer for Castries South	Local
St. Lucia Solid Waste Management Authority	Headquarters	Mr. Louis-Fernand	General-Manager	National
Organization of Eastern Caribbean States	Environmental and Sustainable Development Unit	Mr. Popo	Programme Officer for Disaster Management and Sustainable Livelihoods	Regional
St. Lucia Social Development Fund	Headquarters	Dr. George	Technical Assistance Coordinator	National/International

5.4.1. Theme 1: Governance

This section deals with the policy issues – that refer to regulations, enforcement laws etc. - and financing concerning waste management and poverty reduction, from a regional, national and local level, and is subdivided respectively.

5.4.1.1 Sub-theme: Regional Governance

This section focuses on the role of the Organization of Eastern Caribbean States in the implementation of the OECS Solid and Ship-Generated Waste Management Project, and the implications thereof for waste management in the member state of Saint Lucia.

From the interview with Mr. Popo, it was very important to establish from early on what exactly the OECS' mandate involved so as to understand the role the organization did play with the establishment of the St. Lucia Solid Waste Management Authority, and what role it could or could not play with the potential resource recovery programme. According to Mr. Popo, the OECS basically provides – with respect to the mandate of the Secretariat – very strong policy advice to the various governments of member states, in the context of economic integration. By doing that, it also responds to the needs of the member states, and attempts to facilitate the mobilization of resources, (Popo, personal communication 2011, p.1). As such, the OECS Solid and Ship Generated Waste Project was an environmental initiative aimed at addressing the need

for better waste management services among the member states. The role of the Secretariat was “to assist in the coordination and implementation of the project; to provide or to develop policy instruments and to provide some strong policy guidelines and advice for the member states”, (Popo, personal communication 2011, p.1). The Secretariat also mobilized different natural resources with technical resources, based on the needs of the respective governments at the national level. As a result, there was a kind of regional programming on solid waste management, which created and/or strengthened solid waste management entities, staffed and supported by national governments, to deal with some of the island’s issues, (Popo, personal communication 2011, p.1). However, Mr. Popo stressed that the Secretariat did not implement the measures developed under the project since it is not the role of the Secretariat to do so. The measures developed were national, country-specific responsibilities. In short, the Secretariat played a consultative role in terms of reviewing some of the legislative, regulatory and institutional arrangements, with respect to solid and ship-generated waste management.

Moreover, Mr. Popo stated that the review of various recovery measures in the countries [member states] led to the emergence of the Environmental Levy, which was one of the major instruments with respect to waste recovery. The Environmental Levy placed a fee for every tourist that entered the country including cruise ship passengers. The levy was also intended to provide governments with the necessary revenue to fund budgetary line items that speak to recovery programmes, (Popo, personal communication 2011, p.3). As such, it was not the role of the Secretariat to implement such measures, but rather to provide the expertise and legislative framework for the successful implementation of such measures.

5.4.1.2 Sub-Theme: National Governance and Financing

This section looks at the national policies governing solid waste management in Saint Lucia and the main agency entrusted with carrying out said responsibilities. It also denotes the revenue streams depended on to finance solid waste management services.

According to Mr. Louis-Fernand, General-Manager of the St. Lucia Solid Waste Management Authority, the Authority:

Has a mandate to manage all the garbage in the country, but more specifically we [the Authority] have a mission and responsibility to ensure all domestic waste is under contractual arrangement, and is properly contained and taken to our two landfills, the Deglos Sanitary and the Vieux-Fort landfill. Now there is also the situation pertaining to commercial waste...the various corporate organizations in the country make their own arrangements but of course we work very closely with them to ensure that whatever commercial waste that is generated by them, is collected by special arrangements made by them, (Personal communication, July 1st, 2011).

The contractors are engaged for a five year term, and are responsible for garbage collection in specific communities; each community on the island is served without exception. The landfill is operated by weighbridge attendants and an operations manager, while the supervisory responsibilities for the entire island are administered by four supervisors, (Louis-Fernand, personal communication 2011, p.1). They supervise each community, work closely with the contractors and the Authority's Education department to ensure public announcements and proper waste management education are reaching the public. All of these activities are coordinated at the Authority's headquarters in Castries.

The main landfill for the island, Deglos – which sits on ten hectares of land – receives the 90,000 tons of garbage generated every year, and its longevity has been projected for another ten to fifteen years. As such, the SLSWMA has been looking for ways to divert some of the waste coming into the landfill from which value can be gained, such as the organic waste for composting. According to Mr. Louis-Fernand, “we

[the Authority] have people from within our very own operations in Japan and Taiwan who are now promoting the whole idea [composting] to the extent that we are getting it into the schools. So this is something that is really ongoing”, (Personal communication 2011, p.2). Moreover, composting is currently encouraged at the household level and school level, although commercial enterprises such as Hotel properties are also encouraged to undertake composting at their properties. However, most complain that there is too much work involved as additional human and financial resources for example, have to be allocated to the activity, (Louis-Fernand, personal communication 2011). Nevertheless, those who undertake composting utilize it for manure in flower and kitchen gardens, and small tree planting. From a policy perspective, there is no documented future plan for composting, (Jean, personal communication 2011, p.1).

Furthermore, there is no interest in recycling which is considered “...out of our [the Authority’s] league...”, (Louis-Fernand 2011, p.2). Mr. Louis-Fernand stressed that the implementation of such initiatives are not within the mandate of the Authority, however, they do encourage a reduction of garbage in the environment, and persons interested in aiding in this process through their own private enterprise. Moreover, given that the Authority is currently operating at a deficit of XCD\$1.9 million dollars, pioneering such initiatives as a recycling plant or simply expanding the composting project on a larger scale is not feasible.

If there is surplus money then yes, perhaps we could start looking at that [a recycling plant], but we would give perhaps greater priority to the whole amplitude of things like composting in a bigger way...Yes things like that we want to do! And to ensure that the garbage at the landfill is not just another garbage dump, that we can develop initiatives like that, an orchard for that matter. We are very keen on things like that. (Louis-Fernand, personal communication, July 1st, 2011).

In terms of financing, the national government provides a small subvention, but most of it comes from taxes from the St. Lucia Air and Sea Port Authority (SLASPA) based on

the number of people who land in Saint Lucia, (Louis-Fernand, personal communication 2011, p.3). However, due to the limited governmental financial resources, the Authority like other government departments has been asked to cut its budget, thereby affecting the Authority's ability to operate effectively. Although the Authority also receives funds from doing odd contractual jobs for the hospitals, as well as some commercial enterprises, there is still a limited revenue stream. See Table 5D below.

5-D: Table Denoting the Proposed SLSWMA Budgetary Summary for 2011/2012
Proposed Budget (USD\$)

Revenue	
Cruise Ship Passengers	912,890.35
Stayover Visitors	470,040.73
Shit Waste Disposal Fees	105,555.55
Special Disposal	38,666.67
Other Income	40,740.74
Net Revenue minus the IATA Head Tax	1,559,665.15
Recurrent Expenditure	
Administration	551,972.95
Waste Collection Expense	2,028,535.52
Landfill Expense	1,122,841.09
Hazardous Waste Management	62,543.70
Total Recurrent Expenses	3,765,893.26
Total Deficit	2,206,228.11

Source: St. Lucia Solid Waste Management Authority Budget Summary 2011/2012. SLSWMA Headquarters, Castries, Saint Lucia.

5.4.1.3 Sub-theme: Local Governance

This section focuses on the implementation of national policies at the local level with regard to community development.

The purview of community development falls under the Community Services Unit, which operates within the Ministry of Social Transformation, Local Government, and Community Empowerment. The Community Services Unit is,

The premier agency within the Ministry of Social Transformation for all community development activities, community groups and organizations, and NGOs. It is specifically responsible for community centres and human resource development centres around the island, and the activities that take place within them. The Unit is also the lead agency for poverty reduction strategies at the community level, (Mrs. Joseph, personal communication, June 24th, 2011).

Within the Unit, each of the island's seventeen constituencies are supposed to have a Social Transformation Officer (STO), though there are currently only eleven. At no point in time have all positions been filled at once, and this is largely due to the lack of finances to hire the necessary personnel, (Joseph, personal communication, 2011, p.1). Even as it stands, most of the STOs in the Castries district are saddled with two electoral constituencies such that one STO may be responsible for Castries Central and Castries South. Some of the main responsibilities of the STOs are: to act as a liaison officer between the communities and government; to work with all community based organizations - NGOs, government and other agencies – both in the private and public sphere; to streamline programming and impact assessment; and to foster a stronger sense of community among residents, and the various organizations, (Joseph, personal communication 2011, p.2). Moreover, they [STOs] assist the community based organizations in strengthening their institutional capacity in terms of their registration, opening bank accounts, and aiding in the development and implementation of projects and programmes at the community level. (Joseph, personal communication 2011, p.2).

Mrs. Joseph, who was interviewed by the researcher, is the STO for the Castries Central constituency, which includes the urban poor community of Faux-a-Chaud. Within her jurisdiction, Mrs. Joseph states that in order to accomplish these responsibilities, they have begun doing “community asset mapping”, (Personal communication 2011, p.1). This involves identifying the resources within a community – both natural and human resources – so that the sustainable development of the community may be achieved by pulling these various resources together as the basis for

further development (Joseph, personal communication 2011, p.2). Another key initiative which currently operates in the community of Faux-a-Chaud is the After-School Programme. This programme is geared towards providing child-care after school while parents are still at work, as well as promoting behavioural changes. According to Mrs. Joseph, many of the young children in the community are left without proper supervision for many hours each day, and as a result roam the streets and engage in deviant behaviour, (Personal communication 2011, p.2).

With regard to the community of Faux-a-Chaud, Mrs. Joseph agrees with the shared view that “it is an unplanned settlement...you have slum areas, and a high level of unemployment among young people”, (Personal communication 2011, p.3). Although there was a move to regularize such unplanned development with the Programme for the Regularisation of Unplanned Development (PROUD) implemented in the early 2000s - to give these individuals access and title to their property - it has since been dismantled, (Joseph personal communication, 2011, p.3). Moreover, given the urban character of the community versus the more rural nature of most communities on the island, Mrs. Joseph acknowledges that her approach to addressing some of the community’s issues must be different. Some of the challenges identified in working with the community of Faux-a-Chaud are: the lack of community cohesiveness and solidarity, which affects one’s ability to effectively implement and sustain new programmes; the high level of drug use and abuse; and the discrimination targeted towards persons of the slum area based on stereotypes, lower socio-economic backgrounds, and lack of land ownership, (Joseph, personal communication 2011, p.4).

Mrs. Joseph’s experience of working in the community of FAC exposes another layer to the issues discussed above relating to community solidarity and crime. According to Mrs. Joseph, the high presence of drug use and abuse may also be seen

as a significant contributor to the lack of community solidarity and interest in participating in formal community groups; persons with drug addictions may not have the capacity to function in such forums (Personal communication 2011, p. 4). As such, it is possible that such afflictions place significant stress on support systems, leading to the fragmentation of family relations. Persons in such situations may feel that if community groups or government interventions fail to offer solutions to their current problems, there is no point engaging or participating in them. Furthermore, one may deduce that an area with high drug use is also an area with high drug sales, thereby encouraging outsiders to enter the communities as clients. The prevalence of a drug trade increases the potential for crime in the area by outsiders more inclined to steal or rob in order to afford their addiction. Similarly, it may incite rivalry among communities fighting over the clientele, and therefore lead to acts of violence in rival communities. Possibilities like these emphasize the complexity of poverty, and denote the psychological and emotional aspects that often get over-looked when dealing with potential solutions.

5.4.1.4 Sub-theme: National/International Governance

This section focuses on the evolution of national and international cooperation and governance in addressing poverty reduction in Saint Lucia.

According to Dr. George, Programme Coordinator of the SFA 2006 under the SSDF, prior to 2006, poverty reduction efforts were delegated between the Basic Needs Trust Fund (BNTF) and the Poverty Reduction Fund, (Personal communication 2011, p.1). Due to the inflexibility of donor requirements, the BNTF focused on catering to the most basic of needs in terms of health, education, water and sanitation, and basic infrastructure projects. Their goal was to reduce poverty and improve the socio-economic conditions within poor communities throughout the island, (George, personal communication 2011, p.1). However by 1997, with a change in government the Poverty

Reduction Fund (PRF) was established in hopes of reflecting the global changes that were taking place in terms of how poverty was understood and therefore addressed. As the Community Participant and Training Specialist for the PRF from 2001-2006, Dr. George stated that the PRF began looking beyond infrastructure and placed communities at the core of their poverty reduction strategy; "...rather than going into communities and build things, the focus was on getting communities integrally involved in the development of the community. The PRF focused on building and strengthening the capacity and capabilities of community leaders/organizations to self-manage," (Personal communication 2011, p.2). However, with the focus of these projects in particular communities coupled with the lack of or over-extended STOs, many communities have been left without Development Committees.

In 2006 the UWP gained power and sought a new agency. As a result, they facilitated the amalgamation of the two Funds into the St. Lucia Social Development Fund (SSDF), implementing it under an amended Poverty Reduction Act. The amendments were minor operational and administrative changes, while the mandate remained the same. However, Dr. George notes that at the practical level there was a move away from poverty reduction and a greater emphasis on the holistic development of a community, targeting significant issues faced by the country, such as unemployment, (George personal communication 2011, p.3). The premise for the SSDF approach was based on Community-based Development Planning (CDP). The CDP systematically engages communities to develop some kind of plan for the communities' development. As such, all the stakeholders, beneficiaries, and different groups within the community are identified and engaged. The rationalization behind this change can be understood as follows:

We realized we were doing a whole lot of individual projects around the island and the donor agencies (EU in particular) said look, 'with this programme, what we [donor agencies] would like

you [SSDF] to do is to engage the community and do some social research to provide poverty assessment studies'. But instead of stopping there let us engage all individuals to come together and develop a plan. Let us not just do that, but let us get the communities to organize themselves in terms of Development Committees. Let us provide training for those Development Committees, and provide the communities' with guidance in sourcing financing to implement their plans. But let us give them an opportunity to implement their priority plans/project so then they learn how to manage a project. Let us engage them with skills training programmes so that young, underemployed, unemployed persons will learn a skill and become more employable, (George personal communication, October 4th 2011).

Recognizing that the old approach (top-down) was rather “piece-meal” and addressed mainly the symptoms of poverty as opposed to the core problems, the above components were put together to create a more integrated and effective approach to community development, (George personal communication 2011).

5.4.2.Theme 2: Environmental Health Concerns

This section denotes the environmental health concerns associated with the garbage situation in Saint Lucia.

According to Mr. Louis-Fernand, traditionally, garbage in Saint Lucia has always been managed by taking it to the landfill and spreading it or burying it, without much concern due to the relatively small amount of waste - the majority of which was organic in characterization, (Personal communication 2011, p.2). However, in recent years “there has been an outcry for recycling due to the volume of plastics, in particular, that have emerged on the landscape, defacing the landscape and creating all kinds of problems”, (Louis-Fernand personal communication 2011, p.2). According to Mr. Louis-Fernand, in the case of plastics, though it may not go up in tonnage, it goes up in terms of volume and this will have a negative impact on the longevity of the landfills, (Personal communication 2011, p.2). As such, recycling is seen as a necessity to counteract the problems associated with the growth in inorganic waste being generated on the island, (Louis-Fernand personal communication 2011, p.3). However, despite this recognition, recycling is still not given priority largely due to the perceived financial burden

associated with such activities which the government is unwilling to support. Therefore, from a practical standpoint, the SLSWMA is more interested in lower-cost initiatives such as composting, and has been actively encouraging it.

In addition, the current improper disposal of this inorganic waste has led to the creation of anthropogenic problems, that is, land and sea based pollution, and mass flooding after rainfall due to garbage getting into drains and blocking outlets, (Louis-Fernand 2011, p.3). The improper disposal of waste also provides breeding grounds for insects such as mosquitoes, which encourages the proliferation of these pests and the diseases such as Dengue Fever that they carry, (Louis-Fernand personal communication 2011, p.3).

In an urban poor community such as Faux-a-Chaud where there is confined space in terms of geography, one can observe heaps of garbage coming from the community at any given time of day, littering the drains and river, and overwhelming the communal bin, (George personal communication 2011, p.1). According to Dr. George, it is at this point that one begins to realize that the way in which garbage is being disposed of is producing significant health risks and environmental hazards; “on a day of heavy rain one will observe the drain to be clogged with waste material. This has very serious implications for flooding and pollution”, (Personal communication 2011, p.1).

5.4.3. Theme 3: Faux-a-Chaud Community Profile

This section provides a socio-economic and demographic snapshot of the community of Faux-a-Chaud.

The Country Poverty Assessment Report 2006 identifies the community of Faux-a-Chaud as an urban poor community. All of the interviewees were in agreement that this area was a ghetto or slum, illustrated by the overcrowding, high unemployment

rates, presence of illegal activity and a dominant informal economy. This was a particularly negative perception of the community verses what was constructed based on the survey responses. The survey denoted an employment rate over 70%, limited crime, a high level of stability given the average residency of respondents was approximately 20 years, and a high level of interest in being active participants in the resolution of their waste management problems. This distinction in how the community is perceived is extremely important because it informs the types of interventions that may be introduced to address the 'problems'. These interventions may not be meaningful to the people if they fail to address the real issues of the community.

According to Dr. George, despite the myriad of social issues and host of social practices that need to be engineered in a different direction, these issues cannot be seen in isolation but as part of the very nature of the community, (Personal communication 2011, p.3). That is, the social relations, the consumption and disposal practices of the households and even their survival efforts will affect any type of research or project occurring in the community and therefore needs to be reviewed.

As a supervisor for the poverty assessment study of Faux-a-Chaud in 2005, Dr. George recounted that one of the defining characteristics of Faux-a-Chaud was the presence of children on the streets at every hour of the day and night; in terms of behaviour they were "strong-willed and their language was that of adults", (George personal communication 2011, p.2). According to one resident at the time who was describing the reality to Dr. George, he stated that, "these children have degrees in cursing...a lot of us were raised but these children have been 'dragged up'", (Personal communication 2011, p.2). The phrase "dragged up" was his expression for the type of socialization these children are experiencing. According to Dr. George, the fact that the children were out on the streets at all hours was problematic because it meant that

parents were either not present or that they were unable/uninterested in exercising social control over their children, (Personal communication 2001, p.3). As such, “it was this behaviour that inspired the After-school Programme, the community centre renovation, and the IT centre from the Country Poverty Assessment Report 2006”, (George personal communication 2011, p.2).

However, the effects of these interventions have been mediocre. Based on the responses from the survey, most respondents stated that the After-school Programme was effective because it kept the children off the streets; however, fewer respondents made any mention of the benefits of the programme to the overall development of the children. On the contrary, one may argue that the problem here is not the interventions themselves, but rather the way in which they are organized and the quality of the services they provide.

As a low-income community with overcrowded housing, Dr. George noted that limited public space is shared, meaning that everybody is in everybody’s business, and the social development implications are such that behaviour like the abuse of drugs, illegal activities such as prostitution and gambling etc. occur out in the open, (Personal Communication 2011, p.3). Dr. George also identified the presence of some young mothers with many children in the absence of the biological fathers of these children, stating that a female may have children with different individuals so as to secure money from them, (Personal communication 2011, p.3). As such, these deviant behaviors’ reinforce one another as “...one female parent may be looking out for the guy who sells the marijuana, because he is helping her out with the children”, (George personal communication 2011, p.3). From Dr. George’s perspective, such behaviours perpetuate the prevalence of larger households than parents can actually support, poverty,

deprivation, poor housing conditions, and unsustainable economic practices, (Personal communication 2011, p.4).

In terms of the residents' consumption behaviour, Dr. George described it as "hand to mouth" given the little money that is accrued at one time, meaning that goods are bought for immediate consumption which tends to mean that residents buy stuff more often and therefore have more waste to dispose of, (Personal communication 2011, p.4). As such, "...they will buy a small tin of milk, and a 2lb bag of sugar from the 'ti boutiques' or small shops which are generally packaged in plastic bags", (George personal communication 2011, p.4). Furthermore, although the community is small in terms of geographic size, Dr. George point out that the sheer volume of waste which frequently overwhelms the communal bin is due to the fact that households are often occupied by several families, so although one may look at a house and think "one house, one household" this is not the reality, (Personal communication 2011, p.4).

At the political level, Faux-a-Chaud has often been the subject of a relocation programme when convenient or opportune. This is because the area is located at the waterfront, in close proximity to the port thereby making it prime real estate in terms of industry, trading services and organizations. In addition, there have been conversations regarding the expansion of the Castries city into a duty-free shopping area over the years. According to Dr. George, Castries is no longer perceived as one of Saint Lucia's small communities for fishermen or such small crafts; with such a large port, the focus is on higher class commercial enterprise (commercial vessels, yachts, cruise ships). As a result, "development is not necessarily focused around a settlement such as Faux-a-Chaud. It really is about big business, industrial, commercial and shipping development", (George personal communication 2011, p.5).

5.4.4. Theme 4: Commercial Enterprise

This section speaks to the commercial side of waste management.

Given the increasing volume of waste being generated, coupled with the international push to 'live green' etc. the private sector has seen this as an opportunity to make money by either retrieving recyclable materials and selling them for export or for immediate use on the island to make something. For example, the business *Renew St. Lucia* participates in the recovery of recyclable materials for export to a Canadian supplier called MNZ Global Inc, while *Power Engineering Services* specializes in the local recycling of lead acid batteries, (Louis-Fernand 2011, p.3). *Power Engineering Services* (PES) aside, there are no other companies actively engaged in local recycling, and the impact of PES may be considered negligible. Moreover, companies such as *Renew St. Lucia* do not recycle, but simply recover some waste materials for export.

According to Mr. Popo, over the years there has been 'talk' at the regional level to pursue the establishment of a recycling plant; however, nothing has ever come to fruition. It is recognized that extensive funds are required to establish such a plant and due to the lack of economy of scales among the OECS member states, it was considered too difficult to get a return on this investment, (Popo personal communication 2011, p. 2). Moreover, although such a venture may serve some purpose in the unemployment market, one needs to be certain that it is attractive enough that it can create a viable industry. According to Mr. Louis-Fernand, "it is not just about making money as opposed to jobs or jobs and not making money, and nobody wants to go into it. So it really has to be viable so that 'look I can get a return on my investment but I can also employ four, five, six people'", (Personal communication 2011, p.4).

5.4.5.Theme 5: A Resource Recovery Programme

This section identifies the levels of support (or lack thereof) for the establishment of a resource recovery programme in the urban poor community of Faux-a-Chaud.

All of the interviewees were very supportive of the resource recovery programme idea. Dr. George of SSDF called it “resourceful, innovative and timely given the number of poor communities in Saint Lucia, and the problem that we have with waste management,” (Personal communication 2011, p.6). Given that it is an opportunity to generate income and improve the living conditions of this community, Dr. George believes that “it [RRP] shifts the focus from that macro type of development to a more micro-enterprise but has scope for big business”, (Personal communication 2011, p.3). Moreover it is attempting to transform the social behaviour of people with regard to household waste management practices which has the potential to be revolutionary, (George personal communication 2011, p.3).

Although the SLSWMA education programmes have done well to inform the general public where and when is acceptable places and times to dispose of their garbage, the RRP as envisioned would take waste management practices to another level. According to Dr. George, the RRP, “asks households to segregate their waste which means identifying garbage of different materials, rinsing tins and plastics etc. so as not to attract rodents and placing them separately from their other garbage”, (Personal communication 2011, p.5). It would be revolutionary because “it would bring out several changes in the lives of the people beyond economics but also at the level of behaviour and improving the quality of life of the individuals”, (George personal communication 2011, p.5). As such, should further analysis (market and industry review for example) support the claim that an RRP could: 1.) generate income and provide a livelihood strategy 2.) reduce unemployment 3.) contribute to an improvement in the

living conditions of the community members, then the SSDF would be onboard, (George personal communication 2011, p.5).

According to Mrs. Joseph, the Ministry of Social Transformation, Local Government and Community Empowerment and more specifically, the Community Services Unit would be very interested in the results of this research, given that it falls directly in line with their mandate to encourage sustainable development through the use of locally available and community specific resources, (Personal communication 2011, p.4). Should a demonstration project be recommended, the Unit would support this by making available certain resources such as printing, photocopying etc. as well as use the research to bolster proposals aimed at getting funding for such initiatives at the national, regional and international levels, (Joseph personal communication 2011, p.4).

The SLSWMA was also in support of a resource recovery programme, recognizing that any initiative to remove anything from the landfill benefits the Authority since it increases the longevity of the landfill, while reducing pollution and anthropogenic crises due to improper waste disposal, (Louis-Fernand personal communication 2011, p.3). It should be noted that to date no costing has been undertaken to determine how much would be saved if the life of the Deglos Sanitary Landfill is extended by an additional 10 to 15 years due to the diversion of recyclable materials, (Jean personal communication 2011, p.1).

Moreover, Mr. Louis Fernand recognized that a RRP could encourage opportunities for the growth of an industry if the materials are to be processed locally and made into sellable products, both organic and inorganic, (Personal communication 2011, p.4). Given the potential benefits, the Authority would be willing to assist in terms of segregating materials at the landfill; providing expertise that can lend to the setting up of a prototype; assist in the establishment of composting; as well as perhaps making a

small monetary donation to the project in order to denote their commitment to the programme, (Louis-Fernand personal communication 2011, p.4). Such a programme would be deemed a preventative measure in addressing the island's waste management problem, which is far more effective than curative measures, (Louis-Fernand personal communication 2011, p.4).

Furthermore, Mr. Popo stated that should a demonstration project in the community of Faux-a-Chaud prove successful, then the OECS Secretariat could “provide policy and enabling factors to say that ‘this thing really works and there are similar issues in other communities’, and therefore encourage the national government to strengthen allocations to enable the transfer of this low-cost/high-impact technology”, (Personal communication 2011, p.3). However, Mr. Popo emphasized the role of the national government in playing a decisive role in supporting such an initiative:

We [the Secretariat] cannot implement those things, the most we can do is establish the enabling factors at the policy level. We can provide some regional templates in terms of the most cost-effective way to go about these recovery measures, but we cannot tell the country that they have to do it. (Mr. Popo, personal communication, July 1st, 2011).

Some of the challenges that the interviewees foresaw in the potential implementation of the programme were: getting residents to buy-in and remain committed to that kind of garbage disposal system; preventing the use of children as scavengers for recyclable materials; and locating a place to store all of the collected recyclable materials as well as to produce the products. Since the RRP requires a certain re-socialization of the community in terms of how they manage and dispose of their waste, it may be difficult to induce such a transformation. Nevertheless, Dr. George states that the success of any project lies with the children. That is, if the children are taught what materials are recyclable and compostable, and how to properly separate

them, then there is a higher likelihood that households will engage in this behaviour, (Personal communication 2011, p.6).

Recognizing the children in the community as a vehicle for change as suggest by Dr. George, provides opportunities to turn household recycling and composting into a competition among the children in the community, at which point they are likely to ensure that their household waste gets sorted, even if their parents are not practicing such behaviour. An additional incentive may be linking the segregation and collection to income generating opportunities that can sufficiently motivate persons to participate accordingly.

With regard to the location for the resource recovery facility (storage and production processes), it is clear from all accounts that the community is already too over-crowded to support such a facility within the residential area. However, Mr. Louis-Fernand mentioned an industrial park near the community adjacent to which was a plot of Crown land which had been set aside for the Community Mobilized for Transformation project (COMFORT 2000) established in the late 1990s in preparation for the new millennium. The premise of this project was that every community on the island had to choose one plan to be developed in their community. A recreational park was supposed to be resurrected for the community of Faux-a-Chaud in this area although it never came to fruition. Today, among remnants of this project lay derelict boats and vehicles which have taken up residency. This area provides a potential space for a resource recovery facility. See Figure 5l below.

5-I: Photograph Denoting the Potential Space for the RR Facility



Source: Laurah John (researcher). Personal photographs taken for study, on September 18th, 2011.

5.5 Analysis and Discussion of Themes

The topic of this research project is multi-faceted in that it encapsulates various issues such as household solid waste management practices, urban poverty, environmental hazards, community development, and micro-enterprise. As a result, it requires a multi-sectoral analytical approach that captures the dimensions of the two foundational themes: sustainable community development and poverty alleviation. Therefore, in attempting to determine the feasibility of developing a test case resource recovery programme in the urban poor community of Faux-a-Chaud, the resulting themes from the research were analysed within a conceptual framework linking sustainable community development and poverty reduction strategies to social equity, environmental responsibility, governance (institutional capacity) and economic viability. This conceptual framework enabled a thorough examination of the various elements of this research study, within a systematic and definitive structure that maintained the interconnection of the foundational themes with the results of the study.

5.5.1. Governance (Institutional Capacity)

Institutions are organizational forms such as governmental agencies, NGOs and other non-profit organizations (local, regional and/or international) that shape the social and economic life of the people, (Kairi Consultants 2006). The nature of the institutional structure of the country has considerable influence in the way the various groups in the society adapt to change, civil society's ability to form synergistic relations, and opportunities to look at civil society actors as serious governing partners, in a move towards good governance, (Alipour 2011, p.34).

5.5.1.1 St. Lucia Solid Waste Management Authority

Although the OECS serves primarily as a consultative body, the OECS Solid and Ship-Generated Waste Management Project was the first time that national components - to be implemented by the various national governments of the participating member states - were included in the design of a project. These national components included: the creation and/or development of solid waste management entities to improve the management and control of solid waste and cost recovery mechanisms for the services; investment in the collection, transportation, storage facilities and disposal of waste, the construction of landfills and provision of appropriate operational equipment; and investment in port-reception facilities for ship-generated waste, (OECS ESDU 2003, p.31). To date, Saint Lucia has established most of these components, with the creation of the SLSWMA managing the various mechanisms.

Interestingly enough, the identification of market opportunities for waste minimization and recycling was left to the regional component (Eastern Caribbean) of the project. That the OECS programme management unit (PMU) would be responsible for this component of the Project makes sense given the reality that all member states are also SIDS and therefore economically and physically vulnerable to external shocks. As such, creating an economy of scale between the islands for the establishment of a recycling facility and/ or mass exportation of recovered waste materials for example,

would make such investments and developments more secure, feasible, and potentially successful. However, when placed in juxtaposition to the comments made by Mr. Louis-Fernand of the SLSWMA, there is a particular ideological persuasion that appears; one that emerged in the early 1990s and assumed recognition from the global community, nations, local communities and individuals alike despite its controversy and confusion - neo-liberalism. Neo-liberal economic policies remain attractive and captivating as an inevitable and necessary developmental tool for achieving economic viability. Mr. Louis-Fernand's comment that a recycling plant was out of the league of the SLSWMA and Saint Lucia, denotes the pervasiveness and internalization of macroeconomic policies as best practice and natural. This is the same type of rationalization that makes Faux-a-Chaud the topic of relocation discussions, under each successive administration, for the creation of a duty-free, commercial Castries City scape, to cater to the needs of Cruise tourists versus the local population.

As such, waste recovery strategies such as recycling are approached from a macro-economic level, in order to be feasible. However, relegating waste minimization and recycling strategies to the regional sphere may be interpreted as a tactic to stall any real move towards waste reduction strategies at the national level. National governments can simply defer to the lack of a regional agreement on the recycling issue so as to justify not investing in upgrading their national waste management systems. As a result, it insinuates a lack of viable waste reduction strategies on a micro level, thereby dismissing recovery and recycling as feasible options around which the national waste management policies and system could be built in SIDS. Yet, the island state of Antigua & Barbuda has successfully established a national Waste Recycling Programme, focused on recovery and export of recyclable materials. It began as a demonstration programme from 2005 to 2009, though it continues to sustain itself as a successful

micro-enterprise. However, governments of the Eastern Caribbean have failed to monopolize on the lessons learned from this demonstration project and attempt such in their own countries. This denotes a tremendous lack of political will.

The Saint Lucia National Waste Management Strategy Act No. 8 of 2004 granted the Authority the power to establish and implement “standards and procedures...in the reduction, recycling of, recovery, reclaiming and re-use of waste and the use of recycled substances”, (p. 158). It also called for the review of national waste diversion and reduction options, yet it failed to identify who is to establish and take responsibility for these waste reduction strategies on the island. Mr. Louis-Fernand stressed that the implementation of such initiatives were not within the mandate of the Authority, however, “they do encourage a reduction of garbage in the environment, and persons interested in aiding in this process through their own private enterprise”, (Personal communication 2011, p.4). Yet, the Deglos Landfill was outfitted with a Materials Recovery Facility at its inception. However, it is not being utilized for its intended purpose, and is largely utilized as a storage area, (Jean personal communication 2011, p.1). Very few materials are segregated for the purposes of recycling, and at this time there is no documented future plan for implementation, (Jean personal communication 2011, p.1). The presence of the Materials Recovery Facility suggests that waste recovery was intended to fall under the jurisdiction of the SLSWMA, though this contradicts the role and responsibilities of the Authority as noted above. As such, one may note the discord among legislation and practice, leaving it unclear as to what is the purpose of spending limited financial resources on such a facility.

Furthermore, from Mr. Louis-Fernand’s comment, it can be deduced that the provision of waste reduction strategies such as resource recovery are being left to the private sector. According to DaBreo, privatization of solid waste management services

can be beneficial and provide more efficient and cost-effective services due to the private sector's "better access to flexible financing" and the fact that they are "motivated by accountability, competition, and the need to fulfill certain specific requirements of their contractual agreement", (2003, p. 41). However, this situation may also provide an opportunity for community-supported projects such as a Resource Recovery Cooperative to emerge as a significant player in the national waste management system, while pursuing sustainable community development agenda.

Despite its benefits for standard waste collection services, privatization brings its own challenges with regard to waste reduction strategies. In a developing country such as Saint Lucia, the green economy that has emerged in most developed countries has yet to fully take hold here. As a result, it is not until the last three to five years that private enterprises have begun participating in the export of recovered materials. It should be noted that none of these companies focus solely on the recovery and export of recyclable materials. To date, there are three such companies and their reach is rather minimal in that they recover materials from the landfills by paying for access to the landfills and providing their own personnel who recover the materials for the company, or buys them directly from various commercial sources. They fail to tap into the materials available from household solid waste or community litter and do not create any real incentive for a change in the general public's behaviour. Moreover, since the private sector is concerned primarily with making profits then the frequency of such recuperation is subject to market forces and the international prices for these recovered materials, thereby making recovery in this way very inconsistent and unreliable as a waste reduction strategy.

Furthermore, one of the main objectives of the OECS Solid and Ship-Generated Waste Management Project was "to enhance public health and environmental quality by

strengthening the countries' capacities to effectively manage and dispose of solid waste in an environmentally sustainable manner", (O'Marde 2003, p.30). The creation of the Deglos and Vieux-Fort sanitary landfills along with the establishment of the SLSWMA make strides towards achieving this objective as garbage is no longer indiscriminately dumped on a large scale. However, landfills in and of themselves are not sustainable, even less so for a small island state with limited physical space. Land-filling is at the bottom of the waste hierarchy and despite providing a significant improvement in the solid waste management system on the island at the time of its implementation in 1996, it has since stagnated with regard to further development of more sustainable waste management strategies according to the waste management hierarchy. The island's waste management system has been severely constrained by the existing institutional framework, particularly at the legislative and financial levels, coupled with a lack of political vision and will, irrespective of the governments in power.

The past and present government administrations have failed to create the legislation for the establishment of waste reduction strategies through the SLSWMA, and provide the financial and technical resources to implement such strategies on a national scale. It has also failed to enact legislation such as the Management of Containers Act that would make recycling and resource recovery more attractive, and potentially stimulate the growth of a green economy on the island. The objective of this proposed Act is to "ensure that the bottler, importer, vendor and consumer pays for the negative impact which the consumption of goods sold in a returnable container creates, while also creating an incentive for the reuse of beverage containers", (Management of Containers Act 2008, p. 3). This is to be achieved by placing a deposit levy on all imported containers which may be refunded should the importer re-export the beverage container or otherwise dispose of it in a manner acceptable to the Authority,

(Management of Containers Act of 2008, Saint Lucia, p.8). Owners of companies involved in waste recovery, such as Collins Lynch, founder of *Renew St. Lucia* is an avid supporter of the passage of this proposed Act since he believes it can be used to subsidize the collection of plastic containers that are less profitable to collect, (Collins Lynch personal communication 2011, p. 1). Currently, Mr. Lynch does not recover plastic bottles because the volume required to attain the tonnage to fill a container for export is difficult to come by and expensive to retrieve. However, according to Mr. Louis-Fernand, many companies that engage in the import of containers are against such a levy since the onus will be on them to retrieve these containers separately or sub-contract this activity; an added cost which they do not wish to adopt, (Personal communication 2011, p.5). As such, attempting to pass this proposed Act becomes a much politicized issue and therefore difficult to pass. Nevertheless, such legislation is crucial in the development of a recovery/recycling industry and therefore the interests of stakeholders need to be reconciled. By depending on the private sector to take on such initiative for this particular industry is ill-conceived given: 1. the lack of a green economy in Saint Lucia; 2. the lack of national policies to provide incentives for engaging in such activities; 3. and the instability of world markets that fail to make this a consistently profitable enterprise. As such, there is no incentive for the private sector to invest in the development of national waste management enterprises that target households and communities on the island. Therefore, most Eastern Caribbean countries continue to focus on land-filling as an adequate waste management strategy.

On the other hand, the inefficiencies and adverse effects of our current solid waste management practices will not wait to be addressed by the private sector; the health of the people and the physical landscape will continue to suffer from the lack of solid waste reduction strategies to supplement the current solid waste management

services. As long as there is continued emphasis on macro-economic development external (regional and international) markets as the only viable investment, national or community level waste management programmes will remain relegated to annual activities against littering and community clean-up days organized by the SLSWMA. The failure of the government to address the solid waste management issue, particularly in light of the increased presence of solid waste in the Castries city area and surrounding communities due to rapid urbanization is myopic and a disservice to its citizens. The lack of creativity and vision to develop national waste reduction strategies that feed into a local market, and even provide a new revenue stream for the government and/or SLSWMA (depending on how such initiatives are organized) means that valuable opportunities for growth and development are being missed.

5.5.1.2 Local Governance

Generally, it is extremely difficult to generate and maintain the political will necessary to implement sustainable practices on a large scale, (Bridger 1994). However, by focusing on a level of social organization that is, the urban poor community where the consequences of the numerous deprivations associated with poverty are most pronounced and felt, interventions such as the resource recovery programme - should it be successful - will also be most noticeable.

From the researcher's interviews with the various stakeholders, there was an overwhelmingly positive response to the idea for the establishment of a resource recovery demonstration project in the community of Faux-a-Chaud, assuming further research supports such an endeavour. They also offered support in various forms. Although nothing is guaranteed or set in stone so to speak given that the project is still in

the research phase, it is still crucial that such proposals be supported by decision-makers who have the ability to influence policy at the government level.

One critical aspect of sustainable community development is the creation of a social network within and beyond the community that provides support for all while extending and strengthening cooperation and collaboration between the community and institutions (e.g. government), organizations, and businesses. According to Swisher et al., “the network increases community cohesion and resilience through innovative partnerships, increased collaboration, and a shared vision of the future”, (2009, p.3). Yanarella and Levine argue that, “...this creates a climate more conducive to the kind of long term political mobilization that is implicit in the term ‘sustainable development’ precisely because it places the concept of sustainability in a context within which it may be validated as a process”, (1992, p. 769).

In order to see such a community project come to fruition, securing external funding will be paramount. The Community Service Unit (CSU) and the St. Lucia Social Development Fund (SSDF) represent two avenues through which the RRP may source funding for a demonstration project. However, due to differences in organizational structure, establishing vertical ties with the CSU may be cause for concern. As a department under the direct jurisdiction of the Ministry of Social Transformation, Berry (1993) and Sachs (1995) warn - as cited in Bridger and Luloff (1998) - that “this may lead to the local community and their economy becoming increasingly pulled into this realm by corporate decision-makers...characterized by extreme capital mobility and the use of places as little more than production sites”, (1993;1995). As a result, decision-makers may choose to transfer operations else-where once a place is no longer profitable, thereby leaving the community economically vulnerable, (Bridger and Luloff 1998). Political manoeuvring in such a way that the RRP - that aims to develop local

communities and economies in a sustainable manner - is manipulated for profiteering through subcontracting to corporate entities is definitely an issue which must be taken into account when developing a RRP particularly when it comes to funding. Moreover, the government may use this as an opportunity to leverage political support by taking credit for such a programme.

The SSDF on the other hand has one more degree of separation from the government as a statutory body created by the Poverty Reduction Fund (Amendment) Act 2009. Unlike a government department that is governed directly by public servants who answer to the Minister, the SSDF is directed by a Board of Directors comprised of twelve appointed (by government) board members, which include representatives of the public sector, private sector and non-governmental organizations. Moreover, given that the SSDF is funded by a combination of national, regional and international agencies it is not subject to the whims of one donor, but rather has a strict mandate to follow and must maintain transparency and accountability to ensure future funding, (SSDF official website 2011). In addition, the SSDF's community-based, development planning approach ties in key criteria for sustainable community development, primarily, the 'bottom-up' development strategy that favours increased control over development decisions by the community thus requiring the devolution of some decision-making power to the local level, (Gibbs 1994, p. 106-107). As such, the Faux-a-Chaud Development Committee would be responsible for ensuring a participatory planning process among the residents to ensure that projects such as the RRP are socially and culturally relevant and desired. Although currently dormant, the President of the FAC-DC, Mr. C. King, is looking to revamp the Committee in 2012, and potentially implement a more democratic and participatory system of governing, by holding elections for future members of the Committee, (Personal communication 2012, p.1).

5.5.2. Social Equity

Traditionally, community development has focused on poverty alleviation at the community level though largely within existing social and economic structures. As a result, the priorities and actions in communities were defined by external forces as opposed to local residents and involved no real transfer of power and resources, making this approach top-down and bureaucratic. In light of the short-comings of this approach and the changing conceptualization of poverty as capabilities-deprivation, citizen participation in decision-making and planning processes has been considered the hallmark of sustainable community development and poverty reduction strategies. Equitable access to such processes and resources foster the distribution of benefits across all groups in the community. Institutions such as the Faux-a-Chaud Development Committee were set up as a means of facilitating these processes, while channeling expertise from agencies such as the CSU and SSDF that can open for residents the possibilities that may have remained otherwise unrealized. By utilizing local knowledge and expertise from the community and "...engaging beneficiaries and stakeholders in all stages of the project through community meetings and consultations, to the preparation and implementation of projects", the poor residents are treated as "...partners in the search for sustainable solutions to development challenges" within their communities, (SSDF official website 2011). This approach has many benefits, the main one being that it empowers marginalized groups to develop projects that are appropriate and relevant to the needs of the community; therefore residents buy-in to the project and enhance its sustainability.

However, attempting to ensure social equity through community participation takes for granted the level of social interaction among the residents of the community. Social interaction is "...a pervasive feature of community life that underlies and gives

substance to the ecological, cultural, organizational, and social psychological aspects" (Wilkinson 1991, p. 2). That is, persons interact with one another daily in the process of conducting the various aspects of their lives thereby making place-based relationships an important feature of human existence, (Wilkinson, 1991, p. 22). Moreover, persons with similar interests tend to band together to pursue those interests, developing common perspectives; and it is not uncommon that several groups may exist in one community, whose views are so divergent that interaction is limited and meaningful dialogue difficult to generate. The presence of divergent perspectives and/or interests may mean that it is unlikely that residents will be able to act collectively or develop mutually satisfactory solutions to local problems, (Bridger 1994). Although this did not appear to be a factor in FAC given the high level of interest in the RRP, that may not necessarily be the case when it comes to deciding on a legal structure for the RRP, and other issues associated with the "how" aspect of implementation.

In addition, a participatory approach is time consuming and the facilitation of the process needs to be such that it can help individuals arrive at some kind of a consensus, which is a difficult and painful road to go down. It can breed a lot of suspicion and distress among participants, (George personal communication 2011, p. 5). As a result, it is not uncommon for poor communities to be overwhelmed by feelings of apathy thereby hindering this idea of community-led development. Community participation assumes that a high level of social interaction already exists within communities to support such a development approach. Nevertheless, it is imperative that community members be given the opportunity to have a voice and make choices. The issues mentioned above need to be critically assessed and taken into consideration if the RRP is to reflect meaningful grass-roots action for the community of Faux-a-Chaud.

5.5.3. Environmental Responsibility

The physical environment within which people live has a significant impact on their quality of life and sense of well-being. Within the context of rapid urbanization that has taken place in Saint Lucia over the last twenty years, the physical environment of some communities, particularly in low-income areas poses a threat to the health of residents. This is due to the overcrowding and indiscriminate squatting, consumption patterns, poor drainage and flooding, sanitation and garbage disposal, and limited toilet facilities, (Joseph 2011, p.3).

According to Dr. George, the social practices of the residents are critical in gaining a wholesome understanding of the interconnectedness between geographic challenges of limited space and inadequate basic services and facilities, (Personal communication 2011). In a low-income community such as Faux-a-Chaud, the consumption patterns of households is just as important as the way they deal with their household waste. The “hand to mouth” consumption patterns means that plastic bags and packaging, and small aluminium tins etc. accumulate rapidly as stocks must be replenished frequently due to their small portions. Moreover, these packages are not sorted at the household level and therefore everything is placed into a plastic bag or a bin which is then dumped into the communal skip. Coupled with household solid waste is also human waste as very few homes are fitted with modern toilet facilities. As such, the communal bin not only becomes inundated with garbage but human excreta as well. The stench from the skip as well as the garbage which overflows the bin and enters the nearby drain or covers the ground to become animal fodder has serious implications for both the environment and the health of residents.

While many of the health problems appear to be linked to life style diseases, some of the illnesses can be caused by environmental factors. Improper garbage

disposal attracts rats and other vectors that may contaminate food and cause diseases such as Leptospirosis. After a review of epidemiological data on communicable diseases, it appears that approximately 20% of all confirmed cases of Leptospirosis for 2010 were found in the Castries basin. Although there was no significant increase in the number of reported cases between 2005 and 2010, there was a 21.4% increase in the number of cases reported island wide, (Environmental Health Department 2010). Furthermore, 36.1% of all confirmed Dengue fever cases for 2010 - which is spread by the *Aedes aegypti* mosquito – came from the Castries basin. This represents a 94.3% increase in the number of reported cases for the Castries basin since 2005, (Environmental Health Department 2010). The incidence of these diseases could be reduced if the habitats and food sources of these disease vectors were to be eliminated. This would mean reducing the presence of open water bodies around one's home and ensuring the proper disposal of all types of waste.

In 2008, the SLSWMA undertook a waste characterization study to determine the composition of the island's waste disposed at the two landfills. The organic waste represented the single largest component of the waste stream at 45%, however, this represented a 13% decrease in organic material since 2002. Plastics represented the second largest component at 22%, however, this represented a 13% increase since 2002, (SLSWMA Annual Report 2008, p.50). As Saint Lucia undergoes rapid urbanization and development, the increased importation of processed foods and products in plastic packaging is reflected in the waste stream. The availability of cheap goods is also reflected in the consumption patterns by residents in Faux-a-Chaud, as well as in the plethora of plastic bottles and other packaging observed by the researcher around the community. Given that the waste characterization study was at the national level, it should not be assumed that the waste composition in an urban community such

as Faux-a-Chaud would reflect the national averages, taking into consideration the consumption patterns as described by Dr. George.

The composition in waste coupled with the community's inadequate waste disposal practices and collection services means that the area is vulnerable to anthropogenic disasters such as flooding. Survey respondents appeared aware of and concerned about environmental health issues due to the mass flooding experienced in October of 2010 during hurricane Tomas; a natural disaster that was exacerbated according to the SLSWMA by the presence of litter and garbage blocking vital drains and waterways. However, the presence of garbage in the surrounding drains and river at the time of the survey is a testament that much more needs to be done to educate residents about environmental hazards associated with improper waste management practices, and about their responsibility for and the benefits that would be derived from ensuring the environmental health of the community, while also protecting the natural environment.

5.5.4. Economic Viability

Power Engineering Services (PES) is a local company based in Saint Lucia since 1993 and geared towards energy conservation by providing renewable energy solutions, (PES official website 2011). The company does engage in some recycling, namely the recycling of lead-acid batteries, which are sourced from garages and various dealers island wide and then re-sold to local clients. They also recover fuel tanks, which are exported to Miami, USA to be disposed of, (PES official website 2011). Similarly, the company *Renew St. Lucia* and the *Electronic Material Cycling Company* (EMC²) recover used materials such as: exhausted car batteries, used drink cans, defective metal appliances, assorted scrap metal pieces such as aluminium, copper and iron; and

various electronics, to be exported and recycled or properly disposed of abroad. Such recovery operations are beneficial for the island as they keep electronic and other waste out of the landfills thereby saving space and keeping the environment free of the harmful pollutants/hazardous materials they often contain. However, due to the lack of government legislation to create a viable economy for the proper recovery of such recyclable materials; these operations are limited in scope and impact.

There has been very little creativity or initiative with regard to focusing on recycling at the micro level. Recycling in a SIDS such as Saint Lucia is deemed unfeasible due to the fact that it is often envisioned in terms of large-scale recycling plants that are capital intensive, for the mass reproduction of goods. However, focusing on local solutions to global problems under the auspices of sustainable small island development opens up several avenues for dealing with issues such as solid waste management that can have a real impact on the local environment, economy and society. A resource recovery programme as envisioned for the community of Faux-a-Chaud not only targets urban poverty by dealing with one key environmental hazard, but it can also encourage local capital investment that will sustain local human and natural resources and yield adequate financial returns to those investments, (Rezola and Sterns 2009, p. 1).

One of the key challenges for a recovery programme to work is maintaining a large and stable supply of recyclable materials. In developed countries such as Australia, Canada and Germany, three legislative options have been used to create such supply: mandatory recycling collection, container deposit legislation and refuse bans. The Government of Saint Lucia took steps towards creating legislation in this regard with the *Management of Containers Act of 2008*. Unfortunately the Act has yet to be passed. For a small scale resource recovery project, the lack of such legislation does

not affect the do-ability of the project since the supply of waste materials is coming from the same community that is to be employed in the manufacturing of products from these materials. It will be based on an agreed upon community contract, signed by the elected members of the RRP's executive board.

With regard to the economic viability of a resource recovery programme specifically, certain requirements must be met for it to be economically feasible and environmentally effective. These include: an adequate source of recyclable materials; a system of recovery of the recyclable materials from the waste stream; a nearby facility capable of storing and reprocessing the recyclable materials; and a potential demand for the recycled products. Given that this research study focuses on the social and policy aspects for a potential RRP, a market and industry analysis would be required in order to determine the economic feasibility, by good, qualified local experts. The industry analysis would need to include a waste characterization study in order to determine the various components of the community's waste stream, from which the appropriate product line and material supply necessary, could be determined. The investment cost for the facility and any reprocessing technology will also need to be established. In terms of marketing, one would need to establish whether there is a consumer market for the manufactured products and whether the returns would be sufficient enough to sustain the facility and employment opportunities for community members in the long-run. One would also consider whether a cooperative model - perhaps with several nearby communities - might make the RRP viable? As Mr. Louis-Fernand aptly put it, "It is not just about making money as opposed to jobs or jobs and not making money, and nobody wants to go into it. So it really has to be viable so that 'look I can get a return on my investment but I can also employ four, five, six people'", (Personal communication 2011, p.4).

5.6 Conclusion of Results Analysis

This study gathered information about the existing household solid waste management practices in the community of Faux-a-Chaud and the social, policy, environmental and economic issues that may impact the feasibility of establishing a demonstration resource recovery programme in this community. Based on the factors identified in the research data, each factor was evaluated as an incentive or barrier to initiating a demonstration RRP, presented in Table 5E. This section also provides a summary of the analysis.

5-E: Table Denoting the Assessment of Incentives For and Barriers Against Developing a RRP from a Social and Policy Perspective

No.	Factor	Assessment
Institutional Capacity		
1	Government Policy	Barrier
2	Community Services Unit	Incentive
3	St. Lucia Solid Waste Management Authority	Incentive
4	St. Lucia Social Development Fund	Incentive
5	Faux-a-Chaud Development Committee	Barrier
Community Capacity		
6	Household waste management practices	Barrier
7	Environmental health concerns	Incentive
8	Interest &Willingness to participate in a RRP	Incentive
9	Demographics	N/A
10	Faux-a-Chaud Development Committee	Barrier
11	Community cohesion	Barrier
12	Land availability	Incentive
13	Human resources	Incentive
Economic viability		
14	Market and industry analysis	Barrier
15	Co-operative Model (include other interested communities)	Barrier

The analyses of the country's governance/institutional capacity as it relates to the research denotes mixed results. That is, there are both challenges and incentives for the RRP. The main barrier exists at the policy level; the government's lack of political will means that there are no waste recovery systems already in place to facilitate the RRP in terms of the segregation and collection of recyclable materials from households.

Moreover, failure to pass the *Management of Containers Act 2008* and to arm the SLSWMA with the power and finances to move forward and develop and implement more sustainable and environmentally sound national waste management programme has only served to hinder the capabilities of the Authority. The lack of a national solid waste management plan and the expectation that when operations are privatized, more attention will be given to investigating waste reduction is just another example of deficient action on the part of the government. As such, the RRP would have to start from the very beginning in terms of developing a waste segregation and collection programme within the community of Faux-a-Chaud, which will require significant human resources.

Despite the lack of legislation to facilitate the RRP, the overall institutional support by the SSDF, CSU, and SLSWMA is an incentive for this project. The enthusiasm and support for the idea alone is grounds to pursue the research necessary for establishing such a demonstration programme. These institutions have offered support in the form of technical, administrative, human, and potentially financial resources. Such support would help this programme come to fruition, but more importantly, it denotes the level of trust and faith that exists for the success of such a programme. In addition, should a demonstration project prove successful in addressing the issue of waste management in the context of urban poor deprivations, then there is a possibility that the OECS – as a regional consultative body – may use its powers of persuasion to encourage the national government and perhaps even other member states to look into adopting a RRP on a wider scale. Moreover, if the knowledge, experience, and best practices of the Antigua & Barbuda Waste Recycling Programme can be shared to help navigate the FAC resource recovery programme to success, then

the evidence will be clear from a national and regional standpoint, that similar initiatives should be started in more communities and islands.

The household waste management practices of the residents is considered a barrier given that all residents store all of their household waste in plastic bags (53%), closed bins (25%) or open bins (21%). Irrespective of storage mechanism all the garbage is eventually disposed of in the communal skip. These practices are seen as a barrier because the RRP will require a complete re-socialization in terms of the manner in which residents see and handle their garbage. That is, residents will have to be shown how to segregate their garbage, and taught what materials are recyclable and compostable. They will have to be told to rinse the materials before placing them in separate bins (or whatever method of storage will be offered). Given the extra work involved, it then becomes a convenience issue which again may be a barrier. Until it becomes a “normal” practice, it will require persons to have a more conscious and careful relationship with their garbage, one which they may not have time to or care for. In addition, the human resources required for such regular demonstrations and routine check-ups will be an additional expense and barrier.

Despite these barriers, residents’ environmental health concerns proved to be the primary motivating factor in how residents deal with their garbage and is therefore considered an incentive to the RRP. That is, respondents care about living in a clean and healthy environment; waste related issues such as pollution, litter, anthropogenic disasters were opined to be areas of concern by the majority of respondents. Moreover, a strong majority (72.3%) were concerned about the lack of recycling options for waste disposal. As such, these results denote a strong indication that residents will be motivated to participate in the segregation storage of recyclables materials for the RRP.

The demographics factor was deemed not applicable in the list of factors. This is because the univariate analysis showed that no single demographic characteristic was found to be significant in predicting the respondent's willingness to participate in the RRP. In fact, respondents were so willing to participate (over 90%) that this factor was seen as an incentive for the programme. Moreover, the primary motivating factor for close to half of the respondents was the opportunity to gain knowledge and skills. It is clear that some of the respondents recognize the RRP as an opportunity to not only better their community, but also to better themselves.

In terms of securing the resources available within the community, the results were mixed. Firstly, the Faux-a-Chaud Development Committee is seen as a barrier because it is now currently dormant. Having spoken to the current President of the Committee, it is clear that tensions between the Committee and the CSU have led to the Committee becoming inactive so as to avoid dealing with the CSU. It is believed that such a negative relationship between the two bodies - both of whom are valuable players for the establishment of a RRP - will hinder the development of any plans such as the RRP. However, the President of the DC has indicated that he will be looking to revitalize the DC in 2012 and attempt to move forward with the community's development plans. This is to be seen.

Moreover, the Development Committee has been identified as the facilitator of the participatory processes involved in creating the development plans for the community. However, this role becomes problematic when the majority of respondents (46 out of 47) are unable to identify the Development Committee as an organization present within the community. If community development is a grass-roots process and thus reflective of the needs and desires of the people, then it is imperative that the persons who are being served are aware of the organization and its role in giving them a

voice. It is believed that a more democratic process to elect persons by the community for the DC will be one of the first steps towards increasing the visibility of the DC within the community. This will also make it easier to mobilize residents around various issues such as the RRP.

The factor community cohesion is considered a barrier because the success of a programme such as the RRP will be dependent on residents working together. The results denote that most respondents do not feel that there is a strong sense of community in Faux-a-Chaud. All residents of working age cannot be employed through the RRP, however, all residents will be needed to voluntarily segregate and prepare their household recyclable and compostable materials for collection. Mrs. Joseph also noted during the interview that the lack of community cohesion has been a hindrance to the success of past programmes, (Personal communication 2011). It will be imperative that most residents “buy-in” to the initiative and recognize that they have a stake in the success or failure of this.

The human capital of the community is seen as an incentive because it means that there are already persons from the community that are trained and/or skilled in various fields that may be relevant to the RRP. Utilizing local knowledge and expertise will not only help reduce costs from having to bring in external professionals, but it may also build morale and the participatory nature of the development process. From the industry breakdown of the respondents, it may be noted that there is a welder, crafts-person, and fashion designer to name a few relevant occupations. Moreover, if a community cooperative model were to work, besides providing employment for some, the profits of the RRP could go back to benefit all in the community by investing in better facilities and services.

The factor land availability was seen as an incentive because the researcher was able to identify a space near the community what could be ideal for the establishment of the RRP facility. The space had been initially provided for a recreational area for the community, though this has not come to fruition. As such, the researcher assumes that this land would still be available for use for another community project. Again, if the RRP were to become successful, then perhaps the profits could be used to build this recreational area later on.

Lastly, the economic aspect of the RRP is a barrier. Without first assessing the market and industry conditions, the viability of a RRP remains unknown. Such analysis will require further research, funding, expertise and time which may not be readily available. Similarly, the suitability of the Cooperative model would need to be assessed. Forming a task force, doing research, engaging the necessary experts and communities will also require time and money. Establishing the economic sustainability of the project is just as important as securing the social, environmental, and institutional justifications for it.

Overall, the challenges do not dissuade the possibility or feasibility of a RRP, but they do need to be addressed before the project can go any further. This will be dealt with in the recommendations section of this study.

6 Recommendations and Conclusion

6.1 Recommendations

In attempting to answer the research question regarding the feasibility of developing a test case resource recovery programme in the urban poor community of Faux-a-Chaud, several barriers and opportunities have been identified through the research. Although there are challenges particularly from a social perspective in establishing a test case resource recovery programme, none of the barriers identified dissuade further research and exploration towards the development of this project. As such, the recommendations section will focus primarily on ways in which one may overcome these barriers. In addition, the researcher will also address the more logistical aspects of the programme's design and implementation based on the results from the study.

6.1.1. Community Capacity

1.) Community Cohesion

With regard to the sense of community solidarity in FAC, survey responses were mixed with some persons feeling that there was a weak sense of community overall. As such, the visible fragmentation and lack of social cohesion can pose challenges for the establishment of the RRP since a large part of its viability depends on the community working together. That is, community-based initiatives such as the RRP interact with other processes occurring within the community, and positive outcomes are dependent

on the norms of trustworthiness and reciprocity that exist, (Putnam 2000). Community development projects can also build a community's cohesiveness by creating avenues for renewing inter-personal networks among individuals who may not normally interact, through enhancing volunteer opportunities and other trust-generating activities, as a "focus for social interaction and the development of norms of reciprocity and trust", (Luckin and Sharp 2005, p.63). In addition, the democratization of the selection process for the Development Committee may enhance community cohesion through its participatory requirement of the community residents.

Community cohesion cannot be forced, thus it is imperative that one finds a method to engage residents not only to rally behind the RRP but for the development of the community as a whole. Some potential strategies are:

- a) to develop and launch a development plan defined by the residents themselves based on what they would like to see happen within their community. Launching a concept such as "Project: Remember Faux-a-Chaud" or "Project Green" that aims to develop the community of Faux-a-Chaud around principles of sustainable development, would give residents a clear and concrete vision of the changes desired, and the benefits residents might see following this new development path for the community. As such, a plan developed by the residents is more likely to be accepted by the community and persons are more likely to help each other in achieving particular goals for the benefit of the community. Moreover, by engaging all stakeholders within the community in this process will provide a forum for individuals with differing ideas to reconcile their differences of opinion and work towards a common goal. This will be by no means an easy or quick process, nevertheless a necessary one that may be sustained by local democratic developments.

- b) Provide volunteer opportunities throughout the various stages of implementing the RRP so as to encourage social cohesion among individuals within the community. This may take the shape of training individuals from the community by a trained staff to aid in the dissemination of recycling and composting information to each household.

2.) The Faux-a-Chaud Development Committee

The now dormant Faux-a-Chaud DC has eliminated a valuable forum for social inclusion for residents' participation in local decision-making processes regarding the community. It has removed a form of representation and an avenue for increased local governance thus enabling the pervasive top-down bureaucratic, paternalist service provision and development model, and hindering community-based development. In order to ensure social equity and participatory decision-making at the local level, the researcher recommends the following:

- a) The current President of the Faux-a-Chaud DC must either resign from his post or reconcile his personal issues with the CSU so that the DC may move forward in dealing with its responsibilities.
 - I. The DC should take steps towards rebuilding a cooperative relationship with the CSU so that projects and plans made may be pursued without undue tension and delays.
- b) The DC should be restructured so that members are elected by and representative of the community. If current members are unable to meet the availability requirements then new members should be elected in their place. The community should determine the amount of time that the Committee can operate for between elections. There should be clear guidelines/protocol for elections

and the change in Committee members. This should be established by the DC but agreed upon by the community.

- c) The DC should develop a clear mandate and responsibilities delegated to specific individuals within the Committee. There should also be agreed upon days and times to meet on a weekly basis and an agenda of items to discuss during those meetings to ensure responsibilities are being met.
- d) The Committee should begin a visibility campaign so as to let residents their mission and function, as well as the opportunities and expectation for participation of residents.

3.) Community Household Solid Waste Management Practices

Given the consumption and waste disposal practices of the residents of Faux-a-Chaud, it is believed that it may be difficult to get residents to “buy-in” to the new method of waste segregation for the RRP. As suggested by Dr. George, the children should be targeted as much as the adults if new behaviours are to be realized within the community. Therefore, the following methods are recommended to aid in the re-socialization of the residents:

- a) The provision of recycle bins for each household, free of charge.
- b) The use of various methods of communication in order to instruct residents on the types of waste that can be composted and recycled, and the proper ways to do so, through:
 - i. One on one instruction by knowledgeable personnel for adults and children,
 - ii. Visual aids such as posters made available to each household,
 - iii. Small group presentations in the community centre,

- iv. Target children through the After-school Programme with different lessons on composting and recovery, including Arts & Crafts.
 - v. Organize regular demonstration sessions at the Community Centre by staff.
- c) Emphasize the importance of their role as collectors and suppliers of recyclable materials for the continued viability of the RRP by continually providing support and encouragement with regular check-ups by personnel. Also, stress that the eventual profits of this programme will be re-invested back into the community for the benefit of ALL.

6.1.2. Logistics of the Resource Recovery Programme

6.1.2.1 The Financial and Market Analyses

In order to stay true to the synergistic modality of the sustainable development model, it is imperative that the economic viability of this project be addressed. Although the social and environmental benefits have been identified in this research, as well as the lack of policy barriers, the final key piece to pursuing the RRP will be based on the results of the financial and market analyses. Given the researcher's limited expertise in this field, the factors examined below are not meant to represent an exhaustive list but rather denote just some of the issues that will need to be addressed in the financial and market analyses

- a) The Waste Characterization Study - Determining the amount of recyclable and composting materials constituent of the total garbage being disposed of in the community of Faux-a-Chaud is necessary to deduce the supply of raw materials available for the production of goods for sale, as well as compost for the

community garden. The composition of the recoverable waste will also determine what types of products can be made, and provide a basic idea of the labour and technological requirements for production. This study will require funding and expertise from the SLSWMA. Since the SLSWMA has already shown support for the RRP, it may be useful to find out to what extent resources may be made available for this study free of charge. The remaining costs may be sought to be subsidized by Ministry of Social Transformation through the CSU.

- b) Identifying the Potential Products – Once the waste characterization study is complete, phase two would be to invite local artists/artisans, designers, entrepreneurs etc. and challenge them to develop potential products that could be sold to the local and visitor markets. Only then will one be able to determine the market for these goods. The results will be brought forward to the community for consultation and the final decision will be made by the executive body of the RRP. The designers of the winning products will be offered a contract to work with the RRP, train the production crew to produce the goods, and allow the RRP to sell these products.
- c) Waste Segregation, Collection and Storage - The segregation of the garbage would be done by supplying every household with a recovery bin as seen in Figure 6A. These bins would need to be sourced and purchased using funds secured for the RRP through a donor agency. The collection of materials from these bins would be the responsibility of hired persons from the community. Given the high density of the community, door-to-door collection seems to be the most appropriate method for collection.

6-A: A Household Waste Recovery Bin



Source: GOOGLE Search engine: 'household recycle bins'

The recovered materials used in the RRP would only be accepted from the specific persons employed to collect these materials. This would be so as to deter others from scavenging, stealing other people's garbage and other potentially dangerous activities in hopes of gaining payment for their individual supplies collected. Once collected – the means of which will need to be determined – the materials would be brought to a facility for storage, separation and production purposes. The location of this facility as discussed previously would be in the industrial park near the community of Faux-a-Chaud. However, since the area is Crown lands, there may be significant obstacles to overcome in order to secure the area for a RR facility. First, permission would need to be granted in order to use the space and this may require paying certain fees to rent the space depending on the negotiated terms. A short-term lease for the duration of the demonstration period at a community rate might be sufficient and more easily negotiated. Also, the Development Control Authority, the statutory agency responsible for the granting of all planning permission in Saint Lucia would need to ensure that it meets environmental and occupational health and safety regulations before being approved. A modest amount of funding would be required to build the facility as well. Potential sources of funding may include:

- The Saint Lucia Social Development Fund (SSDF)
 - The Ministry of Social Transformation, Local Government and Community Empowerment
 - The Caribbean Development Bank
 - The UN-HABITAT Youth Fund
 - The Organization of American States (OAS)
 - The sweat equity by community residents if a Co-operative model is used
- d) The Community Garden – The compost collected from the households by a resident specifically hired to do so, will be used to make fertilizer for the community garden. The researcher identified an area within the community where the garden and composting could be established. Despite the overcrowded character of the community, there is an open space among the houses called “the slab”. See Figure 6B. This area, with a little reconfiguration, could be an ideal space for a small garden of dwarf fruit trees, vegetables and herbs.

6-B: Photograph Denoting the Potential Area for Setting Up the Compositing Site and Community Garden



Source: Laurah John (researcher). Personal photograph taken for this study on September 18th, 2011

Persons interested in the community garden could be sent to the Caribbean Agricultural Research and Development Institute's (CARDI) demonstration and training centre for skills training in farming. This centre also provides cuttings and seedlings for free. Other expertise would also be sought on urban agriculture specifically, so as to ensure limited environmental degradation and public health safety risks. The fruits and vegetables that are bore and the herbs grown could be harvested for sale at low costs to the residents of Faux-a-Chaud, or distributed among the community as part of co-op model too. Alternatively, the produce could be grown specifically to serve the children of the After-school Programme, and for elderly persons living alone in the community. This may be considered a type of safety net for the poorest in the community. However, if this system is to work, there needs to be a code of honesty and trustworthiness (community cohesion) among residents so that produce is not stolen; the Co-operative model might help 'police' this since the entire community would be invested.

The financial and market analysis and examining a potential Co-operative model will determine the viability of this programme, identifying the various financial, human, technological, material and other inputs necessary and the corresponding outputs of revenue and profitability (if any), employment opportunities, wages and overall sustainability of the programme. As such, the future of this project depends on those results, hence the importance of the financial and market analyses as the next phase for further research.

6.2 Conclusion

The challenges and incentives denoted in chapter 4 demonstrate that while social, environmental and policy factors do not dissuade the pursuit of establishing a test case resource recovery programme in the urban poor community of Faux-a-Chaud, it does call for further research with regard to a financial and market analysis in order for the programme to truly encapsulate all four elements of sustainable development. Although there were no policy barriers with regards to waste minimization strategies such as resource recovery for the island, the lack of legislation on such an important issue particularly for a SIDS denotes a lack of political will in terms of moving towards a more sustainable form of development. Moreover, it causes one to doubt the commitments made by the island's past and present governments on issues such as the Millennium Development Goals and Agenda 21. As such, the political geography of Saint Lucia becomes key in understanding the development outcomes that the country faces. While there may be widespread contentions about sustainable development models, the lack thereof and the way in which the mass tourism industry is being developed to account for nearly half of the island's GDP, while damaging its fragile ecosystems, inundating local infrastructure, alienating locals and repatriating large economic benefits from the tourism sector to other countries, is of great concern for the future survival of the Saint Lucia, (John 2010, p.179). Due to the narrow focus on economic growth, the local citizens are not being adequately equipped to partake in the country's development in a way that they may reap substantial benefits. There needs to be a shift in focus towards a more holistic development agenda that encompasses environmental protection and social equity alongside economic viability, and a Co-operative model for a RRP could be one answer.

The resource recovery programme aims to sustainably address some of the issues currently being faced in Saint Lucia, particularly as they relate to the rapidly expanding urban areas, namely urban poverty and inadequate solid waste management services. Recognizing communities as the *modus operandi* of sustainable development, the establishment of the resource recovery programme as a community-based project aims to highlight a starting point from which the country can begin to work towards more sustainable goals that gives precedence to local citizens and governance for the development of communities. Moreover, community-based projects such as the RRP are often seen as enabling significant environmental gains with a minimum of resources due to the greatly reduced energy and overhead costs that characterize the work within a social economy, (Luckin and Sharp 2005, p.64). In relation to waste, community recycling groups are often willing to operate at or below the financial margin because of their commitment to the job, (Murray 1999, p.65). In addition, community-based waste management projects "...are able to maximize the environmental gains from activities such as recycling and composting through their flexibility, responsiveness and innovation in collection methods", (Luckin and Sharp 2005, p.64). Furthermore, all income-generating activities tend "to relate in varying degrees to ethical goals of equity and social justice, and any profits or surpluses are used for reinvestment and community benefit", (Young 1996, p. 34).

With regard to participation in RRP, there is a desire to change the waste management behaviour of residents, which means that in addition to collecting recyclable materials from households in the community, it is just as important to educate residents about the economic, health, and environmental benefits of engaging in this behaviour. Moreover, the RRP could provide opportunities for social and cultural interactions as an important means of strengthening community relationships, leading to

greater effectiveness and empowerment within the community itself, as well as stronger relationships between communities and government, Stocker and Barnett 1998, pp. 179–180). By introducing increased local democratic processes through the election of the DC members, they can even become part of a local governing body. As such, “community-based projects can act as ‘embodied participatory democracies’, which provide a tangible expression of the priorities of local communities”, (Stocker and Barnett, 1998, pp. 179–180).

This research is important because it attempts to propose an alternative development path for the island as well as serve as a prototype for the wider Caribbean by reconciling the desire for economic growth with the social needs of the people within the limits of the natural environment. It also provides a platform for further research into the economic viability of such a proposal.

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Appendices

Appendix A: Documents Reviewed

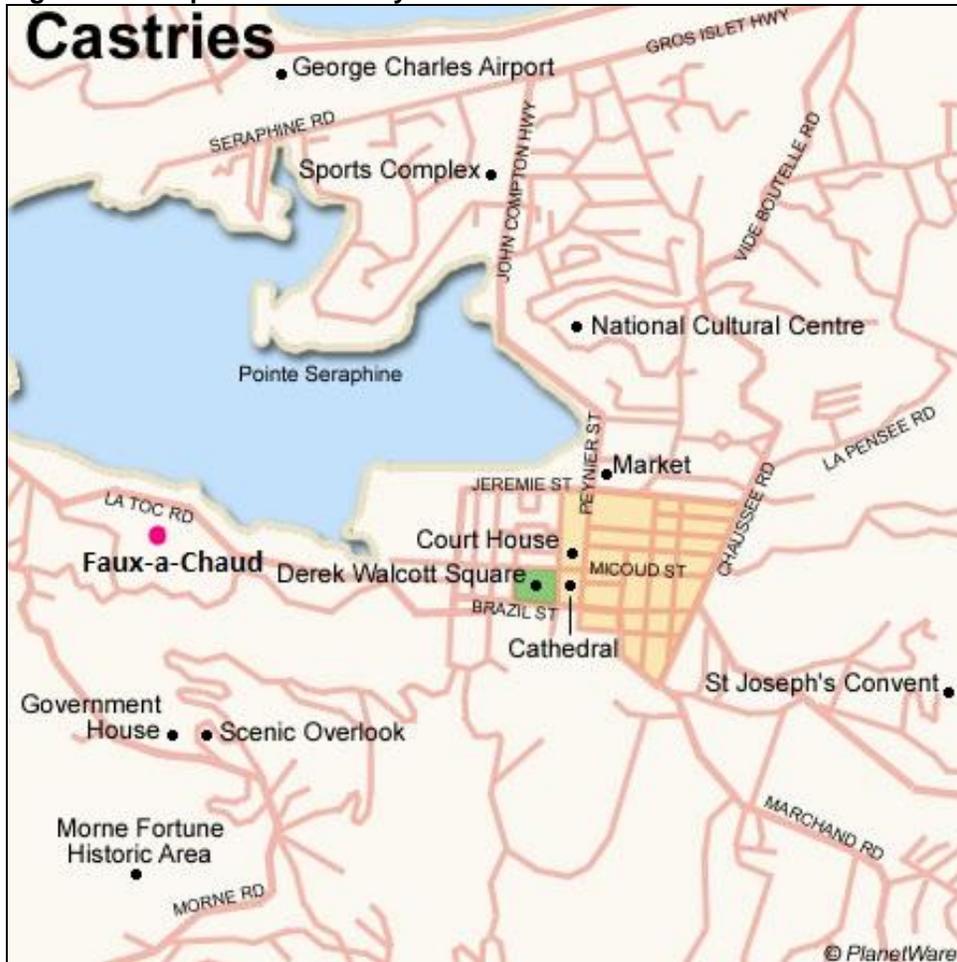
National Waste Management Strategy Act. Saint Lucia Acts No. 8 for 2004.

Management of Containers Act. Saint Lucia Acts No. ___ of 2008, A Bill Enlisted.

St. Lucia Solid Waste Management Authority Budget Summary 2011/2012.

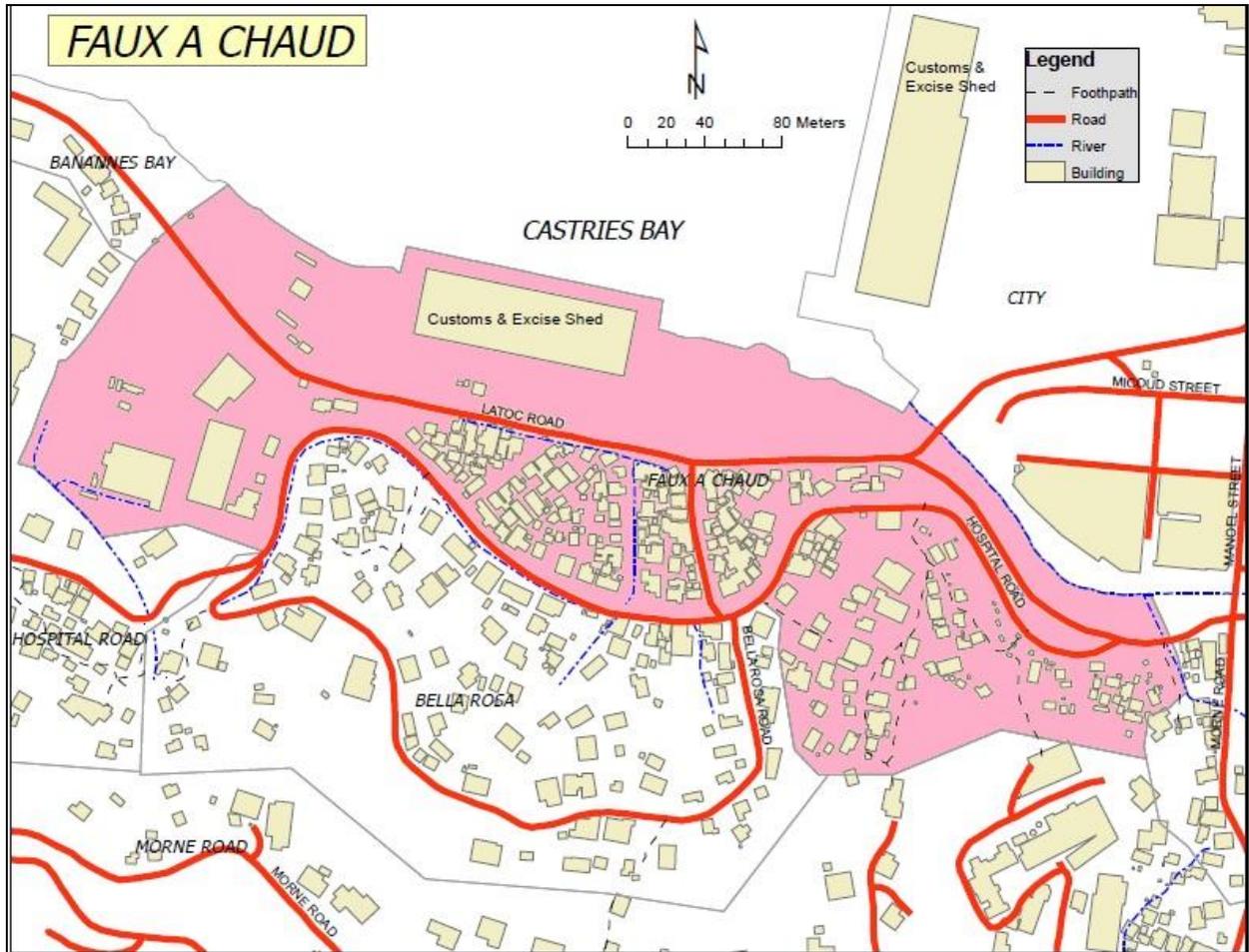
Appendix B: Study Site

Figure B-1: Map of Castries City and Faux-a-Chaud



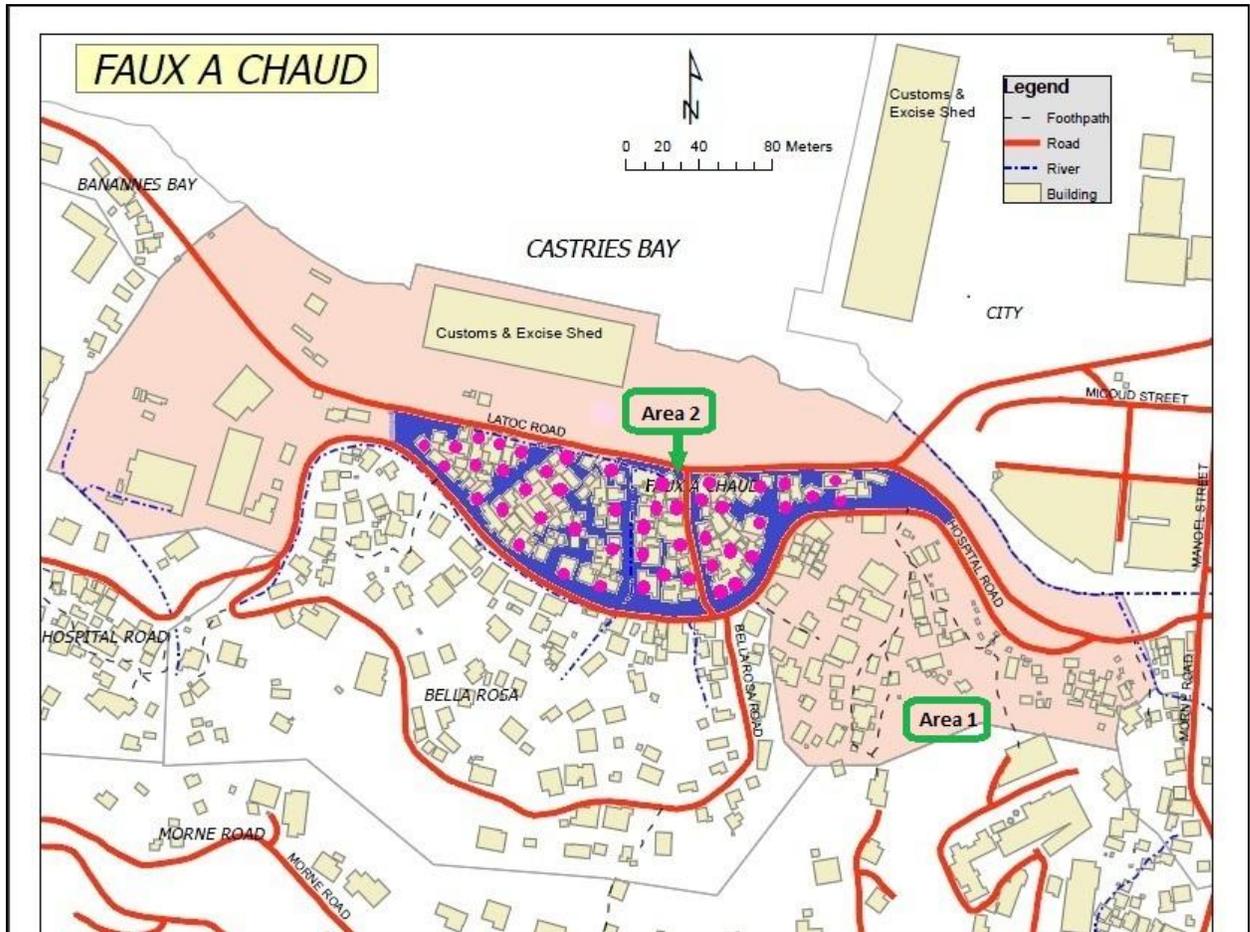
Source: GOOGLE search engine - images. "Castries City Basin". The world wide web. Retrieved November 18th, 2010.

Figure B-2: Map denoting the official boundaries of the community of Faux-a-Chaud.(The pink shaded area represents Faux-a-Chaud)



Source: 2010 Saint Lucia Census. The Central Statistics Office, Mapping Department; Castries, Saint Lucia. Retrieved on June 2nd, 2011

Figure B-3: Map denoting the sample frame of the community of Faux-a-Chaud for the research study



Source: 2010 Saint Lucia Census. The Central Statistics Office, Mapping Department; Castries, Saint Lucia. Retrieved on June 2nd, 2011

Key:

	Community Boundary
	Sample Boundary
●	Households' surveyed

Appendix C: Household Survey

Faux-a-Chaud Household Survey Instrument

Date of survey: -----/-----/----- (Day/Month/Year)

Questionnaire No: ____

Household No: _____

This survey is for the residents of the Faux-a-Chaud community. The intent is to collect data that can provide insight into the topic of my Master's research on urban sustainable development and waste management.

Demographic Information:

1. Age:
2. Gender:
3. What language do you speak predominantly?
English
Patois
4. Family status:
Head of household
Partner of head of home
Adult child
Extended family
Other _____
5. Number of household members including head: _____
6. Can you read and write?
Illiterate
Sign only
Read only
Read and write
What is your level of education?
None
Primary school
Vocational training
Secondary school
Post-secondary
Other _____
7. Employment status:
Employed in _____
 Formal
 Informal
Self-employed as _____
 Formal
 Informal

Seasonal employment in _____
Unemployed (go to question 9)
Other: _____

8. What is the main reason for not working?
No job opportunity
Student
Pensioner
Disabled/illness
Other _____

9. What skills do you have?
Construction
Craftwork
Sewing
Other _____

10. Monthly income:
Above the poverty line (EC\$ 423.83)
Below the poverty line (EC\$ 423.83)

11. How long have you lived in this community?
Born and raised
Migrated from another community on the island
If yes, from which community, for what reason, and for how long and from where?

12. What is your vision for this community/ what are the ways in which you would like to see it change?:

Household Waste Management:

13. Please tell me how your household stores the garbage from your house? (Check appropriate box)

	Closed container
	Open Container:
	Plastic bags
	Pile outside
	Other: specify

14. Please describe how your household gets rid of the following types of garbage from your home (Interviewer: Select the choice below that best fits the respondent's description. Include any additional comments made by the respondent):

Types of Garbage	Bury	River	In yard	On road	Dump-site	Recycle	Reuse	Com-post	Other: specify
Food waste									
Yard trimmings									
Paper and/ cardboard									
Plastic									
Metals									
Glass									

15. What factor most affects how you deal with your waste? (Circle the response)

Pollution and other environmental concerns

Disease and health concerns

Access and convenience of garbage collection and sites for disposal

Knowledge of proper garbage disposal methods

Maintaining clean and attractive surrounding

Availability of financial incentives

Other _____

16. Please indicate whether you are: Concerned, Not Concerned or have No Opinion, (check the appropriate column).

	Concerned	Not Concerned	No Opinion
How concerned are you about garbage polluting rivers?			
How concerned are you about flooding due to garbage blocking drains and gullies?			
How concerned are you about the service provided by the garbage collection services?			
How concerned are you about litter in this area?			
How concerned are you about the health risks due to the unsanitary conditions of the dump?			
How concerned are you about the presence of rats and other pests in this area?			
How concerned are you about the lack of recycling options in the community?			

Willingness to Participate:

17. Have you ever heard about composting? Yes or No
18. Have you ever heard about recycling and reuse? Yes or No
19. Would you like more information about how and what types of garbage you can compost, reuse, and recycle in order to reduce the amount of garbage that you need to get rid of?
Yes or No
20. Do you think that reuse/recycling and composting can have a positive effect on the garbage situation in your community? Yes or No
21. If a recycling program was set up, that collected materials like plastic, paper, metals, wood etc, would you be willing to separate these into separate bags for collection purposes?
Yes or No
22. What factors would influence your decision to participate in collecting recyclable materials from around your community and Castries town:
- Financial incentives
 - Volunteer opportunity
 - Government involvement
 - Personal responsibility to ensure clean and safe community
 - Other _____
23. Would you be willing to participate in a program to compost food and yard waste in order to create a community garden? Yes or No
24. If there was a programme that created income through the recovery of waste materials and creating alternative products such as jewellery, accessories (bags), lamps etc., would you participate? Yes or No

See Images of Recycled Products Below: (survey continues after images).

Image 4: Mzuribeads



Image 2: Light fixture made from recycled soft-drink bottles.



Image 3: Earrings made from recycled glass



Image 5: Belt made from recycled ring pulls



25. What factors would influence your willingness to participate?
- Opportunity to make money
 - Civic responsibility to ensure clean and safe environment
 - Government involvement (finances/policy)
 - Access and convenience
 - Little or no financial cost placed on community
 - Gain knowledge and skills

Community Information:

26. Do you think that such a programme would fit into your vision for a better community?
Yes or No
27. Do you think that there is a strong sense of community in FAC? Yes or No
28. What community based organizations and/programmes are you aware are present in your community?
- o Mothers and fathers groups
 - o Youth groups

- Church groups
- Environmental groups
- After-school programme
- Faux-a-Chaud Development Committee
- Other _____

29. Are there any programmes/organizations that you think are successful examples of the type of development you would like to see in the community? Yes or No

If yes, why?

We have reached the end of the survey. Thank you very much for your time and cooperation. It was truly appreciated.

For any comment or concerns resulting from this study, please feel free to contact the Director, Office Research Ethics at 778-782-6593

Appendix D: Interview Questions Template

Interview Questions

1. What is the mission and responsibilities of this agency/department etc?
2. What is your position within the agency/department etc?
 - a. Jurisdiction
 - b. Responsibilities
3. How do you attempt to accomplish these goals/responsibilities?
 - a. How would you describe the community of Faux-a-Chaud?
 - b. What are some of the challenges that make it difficult to accomplish your goals in this community?
4. What are some of the programmes or activities that have been conducted in the community?
5. Would this agency/department etc. support the establishment of a resource recovery programme in the community, which not only collects recyclable materials but also trains persons to create new products such as jewellery for sale?
6. In what ways would the agency/department support this initiative?
7. Can you foresee any challenges one might face in trying to establish such a programme?
8. What might be some key factors to take into consideration in the establishment of such a programme?
9. Why has the agency not pushed for the recovery of recyclable materials at a regional/national /local level?

Appendix F: Household Survey Results

Table F-1: The age brackets (years) and gender of survey respondents

	Frequency	Percentage
Total	47	100.0
Age Brackets (years)		
15-19	1	2.1
20-24	4	8.5
25-29	6	12.8
30-34	6	12.8
35-39	8	17.0
40-44	3	6.3
45-49	10	21.3
50-54	4	8.5
55-59	1	2.1
60-64	2	4.3
≥65	2	4.3
Total	47	100.0
Gender		
Male	19	40.4
Female	28	59.6
Total	47	100.0

Table F-2: The family status and family size of survey respondents

	Frequency	Percentage
Total	47	100.0
Family Status		
Head of household	32	68.1
Partner of head	8	17.0
Adult child	5	10.6
Extended family	2	4.3
Other	0	0.0
Total	47	100.0
Family Size		
1-3	26	55.3
4-6	17	36.2
≥7	4	8.5
Total	47	100.0

Table F-3: The place of origin of survey respondents

	Frequency	Percentage
Born and raised	23	48.9
Migrated	24	51.1
Total	47	100.0

Table F-4: The distribution of migratory survey respondents based on community of origin, the rural or urban nature of said community, their reason for coming and the number of years residing in Faux-a-Chaud

Years	Community of origin	Rural/Urban	Reason for moving
2	Castries city	U	Opportunity to own home
5	Sans Souci	U	Search of housing
5	Bagatelle	U	Moved in with partner
6	La-Toc	U	Moved in with partner
10.5	Vieux-fort	U	Better opportunities
11	La Cleary	U	Moved in with partner
14	Vieux-fort	U	Moved in with partner
15	Marchand	U	Moved as a child
28	Castries	U	Better opportunities
40	Morne du Don	U	Moved in with partner
50	unknown		Better opportunities
30	unknown		Better job opportunity
25	Guyana (country)	N/A	Reunite with family
2.5	Babonneau	R	Moved in with partner
8	Denney	R	Better opportunities
10	Jacmel	R	Moved kids closer to school
15	Soufriere	R	Reunite with family
15.5	Canaries	R	Reunite with family
30	Choisel	R	Job opportunity
31	Micoud	R	Job opportunity
40	Canaries	R	Reunite with family
50	Laborie	R	Better opportunities
55	Soufriere	R	Moved as a child
20	Choisel	R	Moved in with partner

Table F-5: The highest level of education attained by survey respondents

	Frequency	Percentage
None	1	2.1
Primary	19	40.4
Secondary	18	38.3
Vocational	7	14.9
Post-secondary	1	2.1
Post-graduate	1	2.1
Total	47	99.9*

*Note: the 99.9% is due to discrepancies in rounding off of percentages.

Table F-7: The profile of the unemployed survey respondents including gender, reasons for unemployment, education, and poverty status

	Frequency	Percentage
Total	11	100.0
<i>Gender</i>		
Male	0	0.0
Female	11	100.0
Total	11	100.0
<i>Reasons for unemployment</i>		
No job opportunity	7	63.6
Student	0	0.0
Disabled/illness	1	9.1
Other	3	27.3
Total	11	100.0
<i>Education</i>		
None	1	9.1
Primary	2	18.2
Secondary	6	54.5
Vocational	1	9.1
Post-secondary	1	9.1
Total	11	100.0
<i>Poverty Status</i>		
Above poverty line	7	63.6
Below poverty line	4	36.4
Total	11	100.0

Table F-8: Survey respondents' gender, education level, occupation and industry

Gender	Education level	Job title	Industry/Sector
M	Secondary	Bryden's & Partners	Whole Sale & Retail
M	Secondary	Baker	Whole Sale & Retail
M	Post-secondary	Dance & fitness instructor	Hospitality
F	Secondary	Shop owner (self-employed)	Whole Sale & Retail
F	Secondary	Vegan chef	Hospitality
F	Vocational	Law field (secretary)	Legal Services
M	Secondary	Dance instructor	Government
M	Primary	Repairs tires	Other Services
M	Secondary	Painter (self-employed)	Other Services
F	Primary	fashion designer (self-employed)	Entertainment
F	Secondary	Hotel staff	Hospitality
F	Secondary	Sales representative	Whole Sale & Retail
F	Secondary	Vendor (self-employed)	Whole Sale & Retail
M	Primary	Shop owner (self-employed)	Whole Sale & Retail
M	Primary	Clothing store maintenance work	Other Services
M	Primary	Dock worker (SLASPA)	Government
M	Vocational	Construction	Construction
F	Post-secondary	Skin care technician in training	Other Services
M	Primary	Hotel staff	Hospitality
M	Primary	Tiler (self-employed)	Other Services
F	Primary	Sales clerk	Whole Sale & Retail Trade
F	Vocational	sales clerk	Whole Sale & Retail Trade
M	Secondary	C. Williams (carpenter)	Construction
M	Secondary	Musician	Entertainment
M	Post-graduate	Sales	Whole Sale & Retail
F	Primary	Ministry of Transport (messenger)	Government
M	Primary	Welder (self-employed)	Construction
F	Primary	bar owner (self-employed)	Whole Sale & Retail
M	Primary	Ministry of Communication & Works (sub-contractor)	Government
F	Primary	Castries City Council staff	Government
F	Secondary	pre-school teacher	Government
F	Primary	Vendor (self-employed)	Whole Sale & Retail
M	Primary	Stevedore (SLASPA)	Government
M	Primary	Baker	Whole Sale & Retail
F	Primary	Church's chicken staff	Whole Sale & Retail

Table F-9: Survey respondents' household practices for storing their garbage

	Frequency	Percentage
Closed container	12	25.5
Open container	10	21.3
Plastic bags	25	53.2
Total	47	100.0

Table F-10: Survey respondents' disposal practices for their household garbage

	Non-food waste	Percentage	Food waste	Percentage
Communal Dump	47	100.0	23	48.9
Compost			1	2.1
Yard			1	2.1
Animal feed			22	46.8
Total	47	100.0	47	99.9*

*Note: the 99.9% is due to discrepancies in rounding off of percentages.

Table F-11: Survey respondents' level of concern, lack of concern, or lack of knowledge on various waste management issues

	Concern	%	Not concerned	%	No opinion	%	Total	%Total
Garbage polluting the river	47	100.0					47	100.0
Flooding	47	100.0					47	100.0
Garbage collection service	27	57.5	19	40.4	1	2.1	47	100.0
Litter	38	80.9	9	19.1			47	100.0
Unsanitary conditions of the dump	43	91.5	3	6.4	1	2.1	47	100.0
Presence of disease vectors	43	91.5	4	8.5			47	100.0
Lack of recovery options	34	72.3	5		8	17.0	47	

Table F-12: Survey respondents' knowledge of composting and recovery terms

	Composting (Frequency)	Percentage	Recycling (Frequency)	Percentage
Yes	17	36.2	44	93.6
No	30	63.8	3	6.4
Total	47	100.0	27	100.0

Table F-13: Respondents interested in receiving more information about composting and recovery

	Frequency	Percentage
Yes	46	97.9
No	1	2.1
Total	47	100.0

Table F-14: Respondents' opinion on the potential positive impact of composting and recovery on the garbage situation in FAC

	Frequency	Percentage
Yes	45	95.8
No	1	2.1
Do not know	1	2.1
Total	47	100.0

Table F-15: Respondents' willingness to separate their household waste for recovery

	Frequency	Percentage
Yes	44	93.6
No	2	4.3
Do not know	1	2.1
Total	47	100.0

Table F-16: Respondents' interest in composting for the benefit of a community garden

	Frequency	Percentage
Yes	42	89.4
No	5	10.6
Total	47	100.0

Table F-17: Respondents' willingness to participate in a resource recovery programme which trains persons in how to create different products from recyclable materials, for selling purposes

	Frequency	Percentage
Yes	42	89.4
No	5	10.6
Total	47	100.0

Table F-18: Respondents' knowledge of community groups and/or organizations operating in FAC at the moment

	Frequency	Percentage
Mothers and Fathers group	0	0.0
Youth groups	0	0.0
Church groups	0	0.0
Environmental groups	0	0.0
After-school programme	41	85.4
FAC Development Committee	1	2.1*
No aware	6	12.5
Total	48*	100.0

*Note: Only one respondent was aware of both the After-school programme and the Development committee operating in the community. As such, because each option was treated independently, this one person was double counted.

Table F-19: Respondents' perception of the After-school programme as a successful community development programme

	Frequency	Percentage
Yes	40	85.1
No	1	2.1
No comment	6	12.8
Total	47	100.0

Table F-20: Respondents' vision for their community

	Frequency	Percentage
Youth and adult training programmes	23	30.3
Better infrastructure and basic services	22	29.0
Activities for youth	14	18.4
Community groups	2	2.6
Childcare and elder care facilities	5	6.6
Parental training programmes	5	6.6
Stronger sense of community	2	2.6
No comment	3	3.9
Total	76	100.0

Table F-21: Respondents share whether they think a RRP would fit into their vision for the community.

	Frequency	Percentage
Yes	43	91.5
No	1	2.1
No comment	3	6.4
Total	47	100.0

Table F-22: Residents Sense of Community Cohesion

	Frequency	Percentage
Strong	20	42.6
Weak	27	57.4
Total	47	100.0

Appendix F: Transcript of Verbal Letter of Consent

G-1: Transcript of Verbal Letter of Consent for Survey, Participant Observation and Photographs

Title: Wasted Lives – the Interplay between Urban Poverty and Waste Management

Application #: 2010s0742

Good afternoon/morning:

My name is Laurah John and I am a Master's student in the Urban Studies Department at Simon Fraser University in Vancouver, Canada. I am currently conducting research under the supervision of Professor Patrick Smith, on marginalized or low-income communities in the Castries area. Would you be willing to hear more about my research and see if you might be interested in participating?

The purpose of this study is to explore and gain a better understanding of the conditions in which persons - considered marginalized or of low-income in the Castries area – live. The study will also focus on the experiences and practices of waste management (disposal of human waste and household garbage). I am also hoping to document the physical characteristics of your community.

I am inviting you to participate in this research study, because I am interested in hearing about your experiences, perceptions and opinions regarding your current living conditions, as well as the practical ways/ methods with which you deal with your human waste and household garbage disposal. By participating in this survey and participant observation, you will have the opportunity to tell your story. Once the data collected and analyzed, I hope to paint an accurate picture of the pertinent factors affecting you and the way you live, as well as expose limitations of the current waste management system and highlight opportunities for change.

The purpose of the survey is to collect some basic demographic information such as your age, gender, employment status, income (above or below the poverty line), and number of adults and/or youth living in the home etc. The survey will also ask you to describe your living conditions (access to water, electricity), as well as your personal practices/methods of disposing of human waste and other garbage. You will have an opportunity to discuss your experiences and opinions about the ways in which you live have influenced your access to basic public services. You will also be asked about your interactions with society beyond your community. The survey should take approximately 30 minutes. Because of the sensitive nature of the issues under investigation, you may feel uncomfortable and/or embarrassed, but these are completely normal responses to the questions.

Some individuals who complete the survey may also be asked to take part in participant observation. This is when I, the researcher, spend time with the participant on an informal basis, engaging in their everyday activities while discussing issues relevant/related to the study. The purpose of this is to allow me an opportunity to truly gain a sense of the way of life of the community members, so that particular issues under investigation may be framed correctly, and as such an accurate picture of this community may be presented.

All individuals who participate in the survey and/or participant observation will also be asked for their permission to have photographs of their surrounding area be

taken. You are not intended to be a part of these pictures; you may be included in them. However, your face will be blurred so that you are unrecognizable. These pictures may be used in the final project and/or future publications. The aim is to simply document the physical conditions of the community.

Participation in the survey, participant observation, and consent for the pictures is entirely voluntary and there are no anticipated risks to participating in this study. Verbal consent will be tape-recorded so as to ensure verification/validity. You may decline to answer any of the questions you do not wish to answer. You may refuse to have any pictures taken of your home and surrounding area. Furthermore, you may decide to withdraw from this study at any time, without any negative consequences, simply by letting me know your decision. All information you provide will be considered confidential and you will remain anonymous should excerpts of what you say, or pictures appear in the final project. All data collected will be kept in a secure location and confidentially disposed of in two years time. Should you be interested in the publication resulting from this study, a copy of the executive summary can be made available to you upon request.

Informed Consent Form

- Do you have any questions related to the study or any of the information just provided?
- Do you feel like you have received satisfactory answers to your questions and any additional details wanted?
- Do you understand that this verbal consent process is being tape-recorded for the sole purpose of providing verification for your consent?
- Do you understand that excerpts/quotations from the survey and/or conversations during the participant observation may be included in the final project and/or publications that may come from the research?
- Do you understand that pictures taken of you, your home, and physical surroundings may be included in the final project and/or publications that may come from the research?
- Do you understand that excerpts /quotations will be anonymous?
- Do you understand that anonymity will be maintained in the pictures by blurring out your face?
- Are you aware that you have the right to withdraw your consent at any point in time without prejudice or penalty?

Do you give your consent to participate in this study, with full knowledge of all foregoing, and of your own free will?

Do you agree to the use of anonymous excerpts/quotations in the final project and/or any publication that comes from this study?

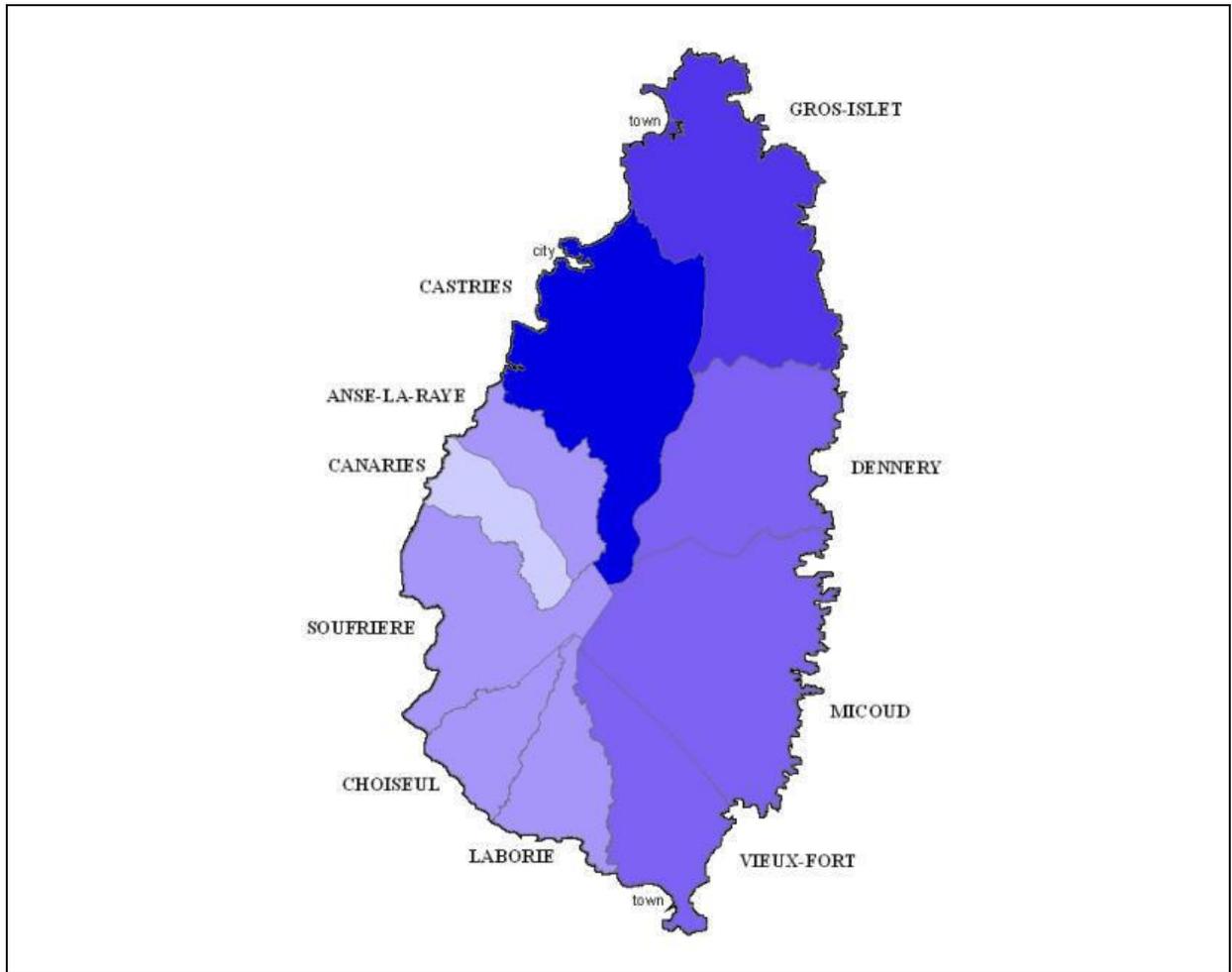
Do you agree to the use of anonymous pictures in the final project and/or any publication that comes from this study?

For any comment or concerns resulting from this study, please feel free to contact the Director, Office Research Ethics at 778-782-6593.

**A positive response must be acquired for all questions so as to demonstrate consent.

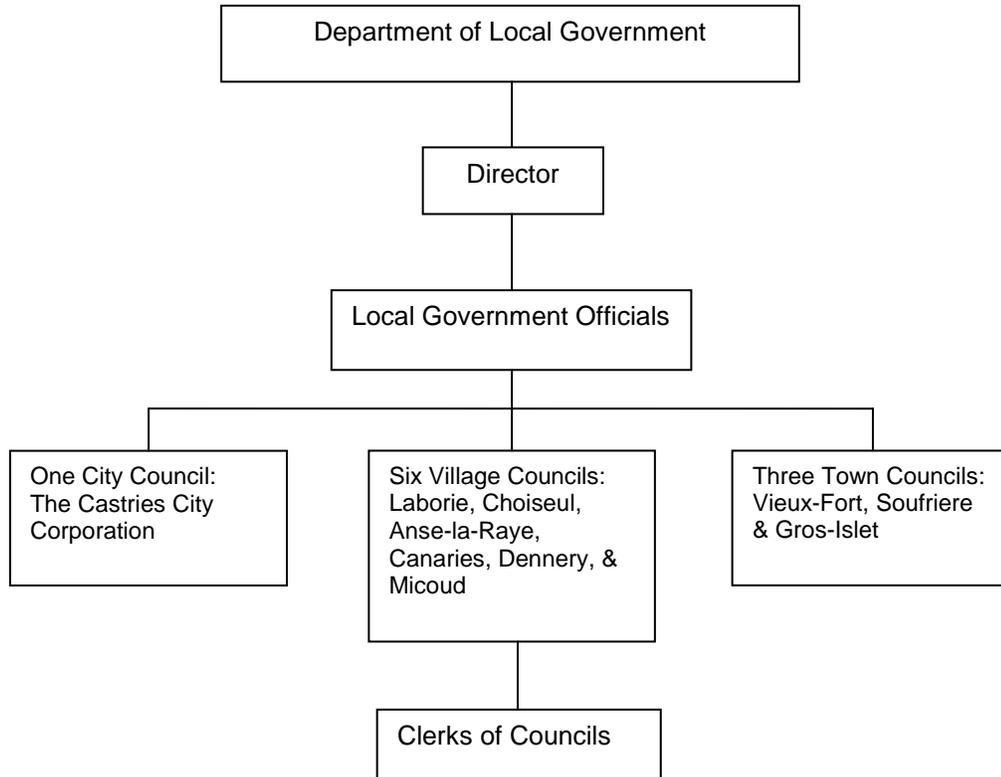
Appendix G: Government Structures and Responsibilities

H-1: Map Denoting the 10 Administrative Districts for Local Government in Saint Lucia



Source: Saint Lucia Government Statistics Department official website. The Mapping Unit. Retrieved on February 12th, 2012 from: http://www.stats.gov.lc/mapping_page/map_index.htm/

H-2: The Organizational Structure of the Department of Local Government and the Responsibilities of the Town, City, and Village Councils.



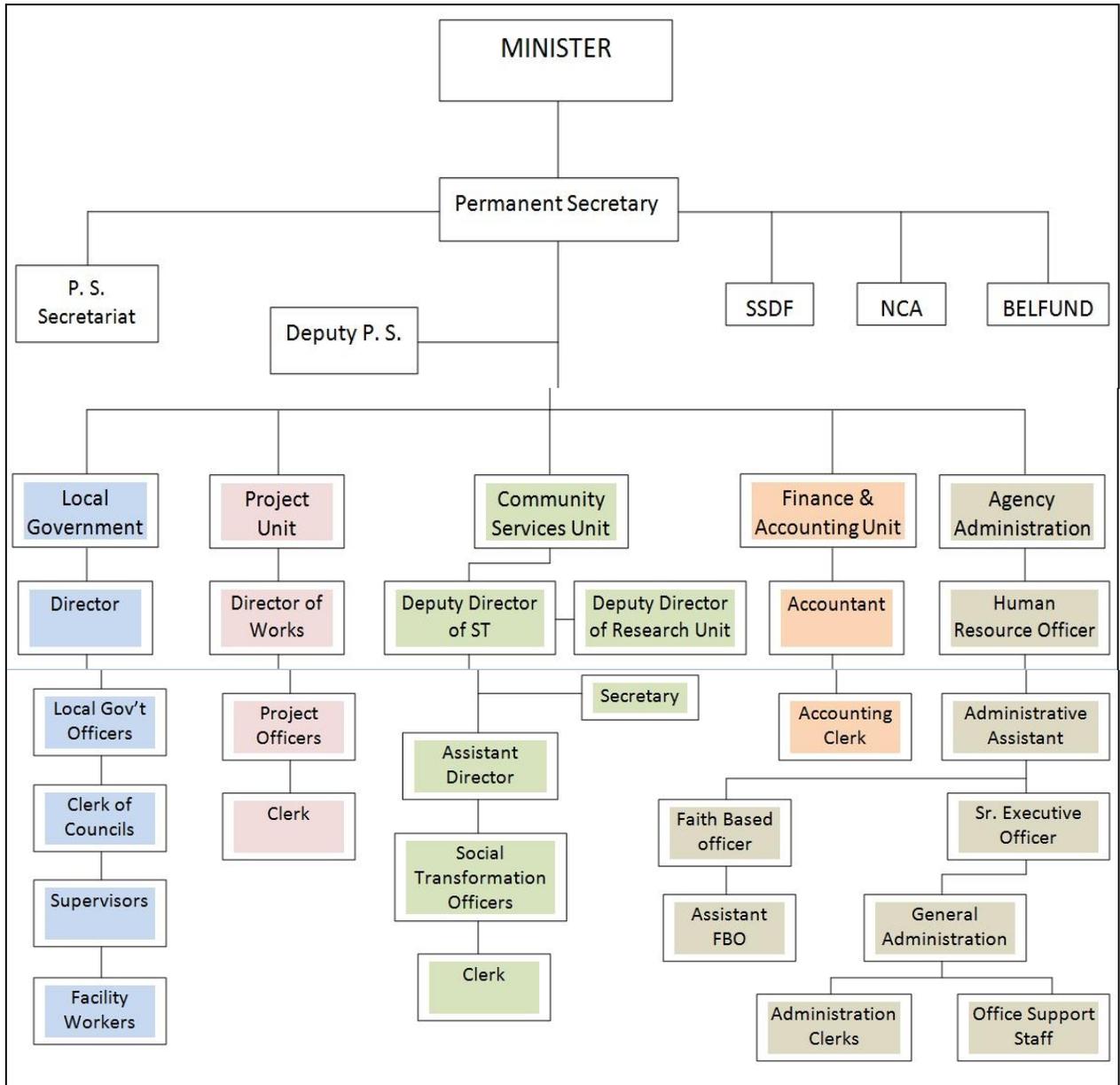
Source: Ministry of Social Transformation, Local Government and Community Empowerment. Community Services Unit. Castries, Saint Lucia, 2012.

Responsibilities of the City, Town and Village Councils:

- Maintaining physical infrastructure;
- Land-use planning and development control;
- Providing sanitation services, including the safe disposal of solid and liquid waste;
- Maintaining recreational facilities and open spaces;
- Regulating areas of public assembly;
- Maintaining community assets, including water resources.

Source: Ministry of Social Transformation, Local Government and Community Empowerment. Community Services Unit. Castries, Saint Lucia, 2012.

H-3: Organizational Chart of the Ministry of Social Transformation, Local Government and Community Empowerment



Source: Ministry of Social Transformation, Local Government and Community Empowerment. Community Services Unit. Castries, Saint Lucia, 2012.

Appendix H: Special Framework of Assistance 2006

The European Union (EU) has been providing temporary technical and financial assistance for traditional suppliers of bananas from Caribbean, African and Pacific states, due to the precipitous decline of their banana industries in the early 1990s. This assistance was intended to enable them to adapt to the new market conditions in the banana sector and to help beneficiary countries to be more competitive and/or to diversify the economies of their rural communities. However, by the latter part of this time frame, the focus shifted to developing human resources and creating a safety net for former producers. The countries involved (defined according to historical references) are: Belize, Cameroon, Cape Verde, Côte d'Ivoire, Dominica, Grenada, Jamaica, Madagascar, Saint Lucia, St. Vincent and the Grenadines, Somalia and Suriname. The temporary special framework of assistance (SFA) is established by Regulation (EC) No 856/1999 for a period of ten years with effect from 1 January 1999 to December 31st, 2008. Although the SFA programme has technically come to an end, in many countries such as Saint Lucia, there are still a number of projects are underway.

In Saint Lucia, grant money for the SFA 2006 programme was implemented by SSDF from 2009 to 2011, with the official end of the programme being December 31st, 2011. The programme approach was based on community-based development planning. The objectives of SFA 2006 are as follows:

1. To enable social recovery and improved stability.
2. To assist communities in developing innovative interventions in response to community problems, needs or opportunities within coherent development action plans which could be integrated within the overall national development framework.

The result of this intervention would mean at least 10 of the poorest communities were supported with capacity building programmes (creation or revamping of Development Committees, and leadership training); critical social and economic infrastructure would be constructed, renovated or upgraded utilising the skilled artisans and unskilled labour from at least 10 beneficiary communities; and skills training and educational programmes would be provided within at least 10 targeted communities based on needs assessment and labour market skills. A total of sixteen (16) rural communities all over Saint Lucia were targeted under the SFA 2006 programme.