Sustainable City of Port-of-Spain: Myth or Reality?

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1.0 Introduction

Urban areas are usually defined by the characteristic engine of economic activity, or as a magnet of hope and even by the typical tall, glass buildings. With over half the global population residing in urban areas presently and a projected five billion inhabitants by 2030 (Martine 2007), the issue of urbanization demands urgent attention. Along with the dominant economic benefits of urban areas such as trade opportunities and labor surpluses, concerns will inevitably arise without adequate preventative measures. These adversities include the growth of informal settlements, increasing ecological footprints, urban crime and the seemingly inevitable sprawl which then aggravates efficient provision of public services such as transport and health. Given the ongoing urbanization trends, and its accompanying adversities, great attention has been diverted to the creation of sustainable cities. Evidence of this growing international attention extends from the World Population Conference in Bucharest in 1974 to current initiatives such as the Millennium Development Goals with Goal 7 seeking to ensure urban sustainability through meeting the target of improving the lives of at least 100 million slum dwellers by 2020 (United Nations 2009).

As aforementioned, the ultimate aim of these initiatives is the establishment of sustainable cities which can be simply defined as green, growing and just meeting environmental, economic and social criteria respectively (Campbell 1996). To achieve the goal of establishing a sustainable city, the role of urban planners is critical. Urban planners effectively seek to arbitrate amongst conflicting interests and provide avenues for sustainable practices to be undertaken. The success of these urban planners depends on various urban planning instruments especially since in the pursuit of economic development the other two pillars of sustainability are ignored. However, given the dynamism of urban areas, urban reform is somewhat mandatory on a regular basis and urban planners need to be aware of the changes which occur and even be able to adopt relevant international best practices to ensure sustainability through effective urban planning instruments.

This report seeks to highlight the capital city of Port-of-Spain in the Small Island Developing State of Trinidad and Tobago. Located on the western side of the island, Port-of-Spain has displayed continuous growth from its initiation in the eighteenth century till present day despite its physical constraints by the Northern Range and the Gulf of Paria. Its ability to grow and develop has been overcome by land reclamation projects and even hillside development with the most significant evidence of growth being urban sprawl along the East-West corridor. An assessment of the urban planning instruments governing the development of the city will be undertaken to determine its effectiveness in achieving the goal of creating a sustainable city as postulated by the nation's strategic plan entitled Vision 2020. This paper further acknowledges the inadequacies of the instruments and puts forth strategies, based on the application of international best practices, for urban reform to achieve a sustainable city.

2.0 Literature Review

The concept of sustainable development has been popularized by the Brundtland Report in 1987 which concisely described it as development which meets the needs of the current

generation without jeopardizing the ability of future generations to meet their needs. The ultimate aim of most governments globally is to achieve sustainable development as they have not only acknowledged the devastating impact humans have had on the environment, but also recognized that the need to curb degrading activities and seek to restore resources is critical. One such resource that has faced endless degradation is land.

Land has been recognized as one of the most limited yet valuable natural resources with a wide range of functions. Its multiple services range from its productive function to a provider of eco-services, a hydrologic function and even as a climate regulator to name a few. To ultimately achieve sustainable utilization of land, sustainable land use planning is crucial. All alternative uses of the land are assessed and the optimal use is practiced to maximize benefits not only to humans but also to the environment.

Given that the majority of the world's population resides in urban areas and utilizes that space, it is inevitable that to achieve sustainable land use planning and ultimately sustainable development, the creation of sustainable cities is important. This is supported by Dr. Nola Kate Seymoar (2009) who postulates that 'Cities are like acupuncture points-interventions in cities can improve the health of the whole planet". Hence, achievement of urban sustainability is seen as a significant step towards sustainable development.

The concept of sustainable cities, as defined by the Urban 21 Conference in Berlin 2000, entails "improving the quality of life in a city, including ecological, cultural, political, institutional, social and economic components without leaving a burden on the future generations". As noted the attainment of sustainable cities does not focus solely on environmental conservation but also encompasses multiple facets. Simply put sustainable cities seek to achieve the three E's, that is, economic, ecological and equity goals which is further supported by Campbell (1996) who postulates similar priorities, by defining sustainable cities as green, growing and just. Firstly, sustainable cities must ensure that its ultimate aim of economic growth and development occurs as cities were traditionally regarded as the economic engines of nations. However, in pursuit of these economic interests, environmental issues must be at a minimal level whereby the future generations are not placed in a risky position. Furthermore, while the economy grows and the environment is protected, the welfare of the population must not be undermined. Sustainable cities are characterized by equity amongst the population whereby each person has equal access to basic amenities and wealth is distributed equally.

However, merely understanding the concept of sustainable cities is insufficient. It is important to also understand the means to achieving these sustainable cities in the quest for sustainable development. Responsibility for the creation of these sustainable cities lies with urban planners. Despite multiple land uses, development usually overrides social and environmental goals, and urban planners aim to "arbitrate between conflicting interests" in an effort to achieve mutual objectives (Potter 1995).

Facilitating the planning process is the urban planning instruments. Multiple planning instruments have been established and successfully implemented such as legislations, policies, development plans, development controls and even zoning policies (Hague 2000). This has undoubtedly contributed to the successes of sustainable cities throughout the world. Three critical urban planning instruments which command significant focus are development plans, development controls and zoning policies.

Firstly, development plans seek to create sustainable cities through a multi-disciplinary approach by correcting the physical, economic and social inequalities. Guidance for construction of these development plans are based on the issues facing the respective urban areas, which aid in providing direction for growth. As advised by Hague (2000), these plans should imbibe three main characteristics. Development plans should have a sense of purpose which is adequately reflected in the plan itself and more importantly all parts of the

plan should be consistent and free of contradictions. Furthermore, one important element of a development plan is clarity on implementation with care being taken to clearly outline responsibilities, steps to be undertaken and other critical issues. Despite its holistic approach to urban planning, development plans have been criticized for its rigidity and costliness (UN ESCAP 2010).

In addition to development plans, development standards are another crucial urban planning instrument in the quest towards sustainable cities. Development controls "provide the real teeth than make plans bite" (Hague 2000). That is, for development to occur permission is to be granted based on approval from planners as guided by various principles advocating ultimate public health and safety. Development standards are responsible for guiding development not only through policies dictating layouts but also building codes. The proposed location of buildings is approved upon consultation with development standards and the building characteristics are also dependent on the specification of the development standards. Hence, approval for development must be clearly aligned to the guidelines of the development controls in place to effectively guide urban planners in making sustainable decisions. While these have proven quite effective where implemented, they have faced numerous challenges in enforcement especially in less developed nations. Also, another factor allowing for its ineffectiveness is the failure of these standards to be updated regularly to accommodate changing urban planning challenges and priorities.

Furthermore, special controls such as zoning ordinances play a vital role in the creation of sustainable cities. Zoning policies make significant contributions specifically to the achievement of environmental sustainability in urban areas. The designation of protected areas is one measure to allow environmental conservation along with the utilization of brown field sites. As these sites, which were previously under industrial use, are currently vacant, future industrial development should be directed to those areas initially to avoid the contamination of pristine sites. In addition, zoning policies play a crucial role in ensuring land use compatibility amongst the competing uses. However, it must be acknowledged that zoning policies are highly ineffective especially in less developed territories where uncontrolled urban growth manifests in the form of informal settlements, not only proving to be a nuisance to adjacent land uses but also encroaching on fragile ecosystems in some cases.

Thus, it is quite evident that to accomplish the vision of a sustainable city, multiple appropriate urban planning tools are available and can be quite effective if implemented and monitored regularly. However, where these instruments are failing to achieve a sustainable city, urban reform becomes mandatory. As cities are dynamic places with ever changing priorities urban reform seeks to adjust existing urban planning instruments or even introduce new tactics in order to achieve urban sustainability in all three categories. To effectively guide urban reform, strategies can be adopted from international best practices, especially from cities that have been declared sustainable by reliable indicators. Nevertheless, successful practices undertaken in cities which are not fully sustainable must not be undermined. However, care must be taken not to adopt international practices wholeheartedly but rather customize those strategies to meet the local demands of the city in which it is to be applied.

3.0 Overview of Planning in the city of Port-of-Spain, Trinidad

3.1 Evolution of the City

Historically, cities in the Caribbean have developed on their leeward coasts as traditional port cities. In the case of Trinidad, the city of Port-of-Spain has been established along the north western tip of the island. Initiating as a small fishing village in 1757 (Rawlins 2009) the

population of Port-of-Spain gradually increased due to multiple factors which led to a simultaneous expansion of its boundaries. Firstly, in 1783, the Cedula of Population invited "every one of all conditions and trades to take up lands of up to 3,000 acres free of charge" (Emrit 2000). In addition, with emancipation of slaves in 1834 and the arrival of the East Indian immigrants in 1845, Port-of-Spain saw further expansion. Today, Port-of-Spain continues to grow not only physically but also economically as high investments and ongoing infrastructural developments stimulate such expansion which in turn increases total population. This physical expansion is illustrated in Figure 1.

Land use in Port-of-Spain is not distinctively separated, but rather mixed. Land uses include residential developments with 4% of the country's total population residing on the city's land mass of a mere 0.3% of total surface area (GoRTT, 2008). Residential developments are formal developments in places such as Woodbrook and St. James, with informal settlements dominating areas such as Beetham Gardens and Sea Lots as determined by socio-economic status and capabilities. Furthermore, as in typical urban areas, commercial land use prevails to accommodate not only retailing and wholesaling but also the manufacturing of goods with the existence of numerous industries, for instance in the Sea Lots area. Another critical land use in the urban area is the administrative function as evident by the 40% of the jobs in the city being owed to the government sector (Rawlins 2009). In addition, other existing land uses in Port-of-Spain include recreational space such as the Queen's Park Savannah as well as land allocations to the transportation system and other relevant infrastructure.

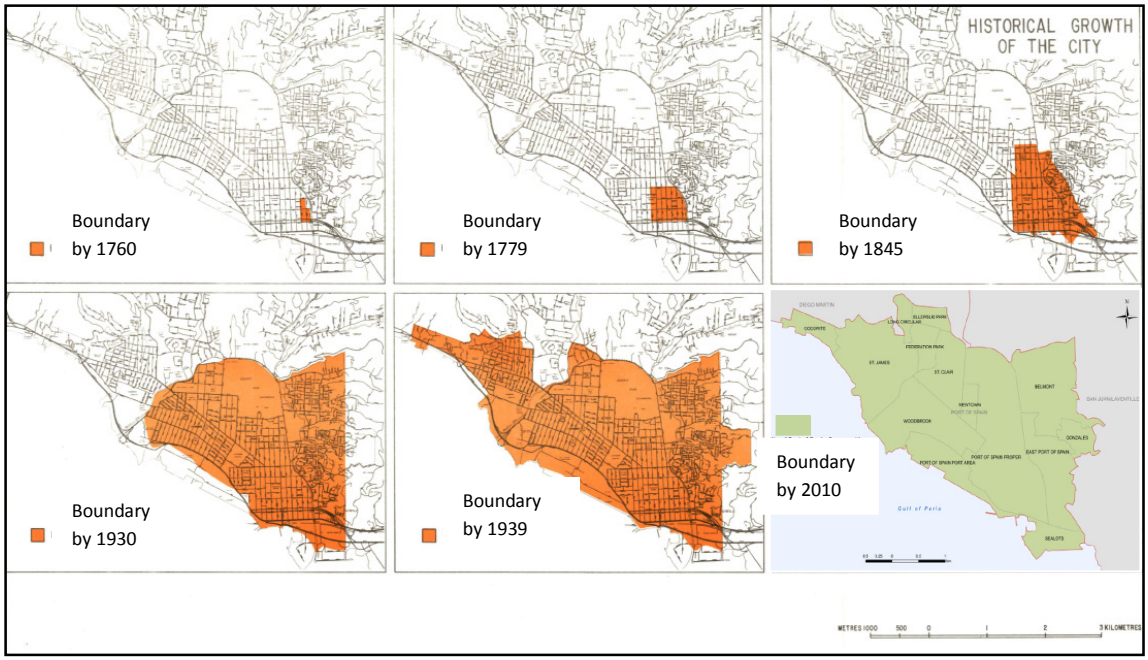


Figure 1 Physical Expansion of Port-of-Spain *(GoRTT 1987, 2010)*

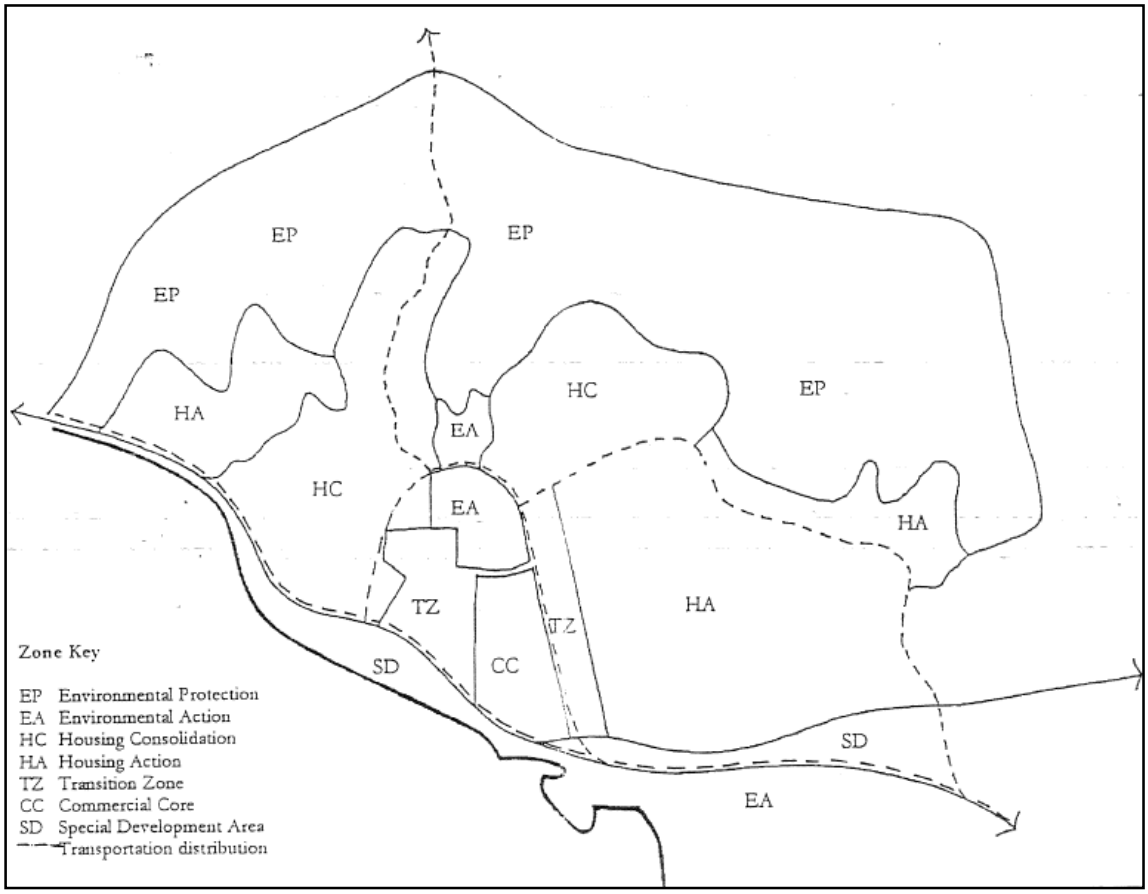
Given the demographic characteristics and land uses of Port-of-Spain, the role of planning is inevitably vital in ensuring sustainability of the urban area. Governed by the Town and Country Planning Act (1969), planning for Port-of-Spain is the main responsibility of the Ministry of Planning, Economic and Social Restructuring and Gender Affairs with the Urban Development Corporation of Trinidad and Tobago (UDeCoTT) having a significant contribution. Through these overarching legislature and institutional frameworks, urban planning instruments have come to the forefront in different forms over the years in an attempt to achieve sustainability.

3.2 Urban Planning Instruments in Port-of-Spain

Development plans for Port-of-Spain have evolved from the early 1970s from simple plans focusing on the Central Business District (CBD) to more complex strategies seeking to address the expanding boundaries and changing issues. The CBD Plan of 1971 was replaced by the Capital Region Plan of 1975 which sought to include not only the CBD in the development plan but also the surrounding areas. This was an attempt to create a balance amongst the "growth of economic activities" and also the establishment of "a healthy physical environment and creating viable social communities" (GoRTT, 2008). However, the Port-of-Spain Plan of 1987 took a different direction as strategies sought to curb growth and embark on environmental restoration initiatives rather than encouraging the development as done before. Today this trend continues as the current plans focus on addressing environmental concerns such as pollution, conservation areas and transportation systems rather than promoting further urban growth.

In addition to development plans, development standards in Port-of-Spain do aid in planning initiatives. Development standards demand that all development initiatives obtain planning approval from the relevant authority. According to the Town and Country Planning Act (1969), development can be defined as "the carrying out of building, engineering, mining or other operations in, on, over or under any land, the making of any material change in use of any buildings or other land, or the subdivision of any land". Planning approval for development in Trinidad and Tobago is determined by the Town and Country Planning Division who seeks to ensure that any development undertaken is in accordance to the development plans established. Approval is based on various standards as stipulated by the Guide to Developers and Applicants for Planning Permission (1988). This guide provides zoning, layout, site development and engineering standards to be adhered to for approval of any development projects.

Furthermore, a critical urban planning instrument governing planning in Port-of-Spain is land use zoning. Though zoning standards are outlined under the development standards, the zoning policy specific to the city of Port-of-Spain is an important tool for its sustainable development. As seen in Map 1, land use zones for the city have been established in the 2000 Development Plan. However, land use in Port-of-Spain today occurs in a mixed manner rather than the rigid demarcations of the zonation policy.



Map 1: Land Use Zoning for Port-of-Spain *(GoRTT, 2000)*

Consequently, it is quite evident that urban planning in the city is governed by comprehensive and well integrated urban planning tools. That is, the development standards are in sync with the development plan, while zoning standards are also well aligned to both the master plan and the development controls. However, the effectiveness of these instruments is questionable. To assess the effectiveness of these urban planning instruments, the extent to which their respective aims have been achieved will be used as an indicator of its success in attaining urban sustainability.

3.3 Assessment of the Effectiveness of the Urban Planning Instruments in the City

The first urban planning instrument described was the development plan. To assess the effectiveness of the development plan governing planning decisions in the city of Port-of-Spain, it will be determined whether the plan imbibes the three qualities of a good development plan as put forth by Hague (2000).

The first quality to be assessed is whether the plan exhibits and maintains a sense of purpose. The development plan for the city clearly states its myriad of objectives ranging from infrastructural developments to housing schemes and even environmental protection. Hence, it can be acknowledged that the development plan is clear on its ultimate goals.

The second quality to determine the effectiveness of the development plan is its consistency. Through a quick analysis of the plans stipulated in the development plan, contradictions must be highlighted. Contradictions are in fact evident in the master plan. For instance, the plan mentions the Water front project which ideally will also provide housing. However, the group in great need of housing is the low income group who will be unable to afford such units.

Hence the inability to afford housing simply contributes to the social injustice meted out to lower income groups and generally materializes in the form of urban crime with dismal statistics in Port-of-Spain such as the murder rate in Laventille having "rivaled those in Johannesburg and Baghdad" (Townsend 2010).

Further contradictory policies are noted as despite the goal of environmental protection, there are plans to set up a composting facility at the Beetham Landfill site, which can adversely affect the wetland ecosystem. This landfill is the largest on the island and unsuitably located on environmentally fragile ecosystems, that is, wetlands. Thus, this landfill which processes over 700 tonnes of waste per day, not only poses a threat to the air but also to the groundwater stores and inevitably the lives of residents (GoRTT 2006). However, the strategy to establish a composting facility on that site does not aid in environmental restoration but simply continues to undermine the value of the wetlands.

Finally, to effectively assess the success of the development plan, the plan should exhibit a distinct implementation strategy, as this usually accounts for the downfall or success of plans. While implementation options have been provided for recommended strategies, details such as time lines and funding necessary are not adequately provided. Failure of implementation is clearly noted in issues such as the transportation system. For instance, the capital's transport hub which accommodates approximately 350,000 commuters on a daily basis (Discover T&T 2008) is in need of repairs as "there had been no infrastructural development of the hub since 1995" (Rambally 2010).

In addition to the inefficiencies of the development plans in achieving sustainable cities, the development standards must also be assessed. The main objective of development standards is to guide development in the city through various control mechanisms. However, this guidance is virtually absent. While building codes do exist, they are inadequate and not enforced. Inadequacy of these codes arises as they are not well aligned to the development of green cities through the creation of energy efficient buildings. No incentives are publicized to educate and encourage developers to establish energy efficient buildings through varying tools such as materials utilized or even the shape and size of the buildings given the urban microclimate. Furthermore, no incentives are in place for developers to harness the unlimited and reliable source of energy in Port-of-Spain, which is solar energy. For instance, the Port-of-Spain International Waterfront Centre comprises of three buildings soaring up to 300 feet (UDeCoTT 2006), which blocks off the sunlight. Thus, it is practical to state that this sunlight could have actually been captured and harnessed to supplement the building's energy budget or even make it self sufficient. In addition, energy inefficiency is seen at the International Financial Centers which are part of the Waterfront Project. These buildings are virtually unoccupied due to poor lease arrangements (John-Lall 2010) and yet cooling units and lights are powered daily. Hence, the failure of the development standards to nurture a sustainable city is also quite clear.

The final urban planning instrument focused upon, the zoning standards, must also be assessed in its attempt to contribute to urban sustainability. With the aim of the zoning policies being to effectively protect valuable land space and ensure land use compatibility, this has not been noted in Port-of-Spain. Firstly, even though the zoning policy has identified areas for environmental protection, there has been indiscriminate encroachment on these delicate environments such as the hillside development along the Northern Range and even encroachment on the wetland areas of the Caroni Ramsar Site.

Furthermore, the zoning policy has failed to eliminate land use nuisances such as the informal settlements dominant in East Port-of-Spain, while land use compatibility remains an issue with the Beetham Landfill located adjacent to and encroaching on the internationally recognized wetland of Caroni Swamp. In addition, ineffectiveness of the zoning policy is also noted through its inability to enforce the zoning standards as brown field sites are overlooked for industrial development in the city. It is also important to acknowledge that the zoning

policy, though it has postulated strict demarcations, has failed to uphold that guideline as mixed land use persists within areas not specified as zones in transition such as parts of Woodbrook.

4.0 Urban Reform

4.1 Justification for Urban Reform

As is quite evident, the city of Port-of-Spain has proven to be unsustainable in terms of the economic, environmental and social pillars. This reflects poorly on the urban planning instruments which govern development in the city. Hence, in an attempt to achieve the ultimate goal of a sustainable city, there is an urgent need for urban reform whereby existing urban planning instruments are altered to meet the needs of the dynamic city or in some cases fresh introductions may be deemed necessary. While it is acknowledged that international best practices are to be used as guides for urban reform, the source of these practices may not necessarily be from declared sustainable cities. That is, practices of cites which may not be fully sustainable can actually be applied to the city of Port-of-Spain, especially successful practices of less developed nations.

4.2 Refinement of Development Plan

According to Rakodi (n.d.) there is a need for cities to move away from the conventional blueprint syndrome when dealing with development plans. Traditionally, these development plans have paid little or no attention to resource allocation and ultimate implementation phases as it simply dictates policies to be implemented without logical justifications and guidelines for execution. Thus, self-sufficient and implementable approaches should be adopted to provide more realistic planning initiatives.

One such implementation approach should be poverty reduction schemes to deal with both issues of social and economic sustainability, through housing and economic strategies (Hague, 2006). However, housing initiatives are not to be the traditional government provision as that has proven to be a failure as it is unaffordable and inaccessible to the those most in need and worse yet, they are not self sustaining. Instead, enabling tactics should be adopted whereby slum upgrading is undertaken with the use of the community members as the labor force and the government's role being limited to the provision of basic amenities.

Success of such participatory planning has been noted in Asian cities where a 'people's process' was adopted (The Third APMCHUD 2010). That is, the people were allowed to determine how to shape their future with the role of government being minimized to site selection. Through this process the role of women and youths was recognized as a critical success factor. Hence, by adopting this 'people's approach' the implementation phase would be more realistic especially in areas such as East Port-of-Spain where unemployment rates are high. Not only will housing issues be resolved but urban crime can be curbed with the engagement of the youths. Furthermore, to ensure the success of this participatory approach the participation of community leaders is critical as they can generate and maintain the willingness amongst the residents to work alongside the government for urban sustainability.

Furthermore, another poverty reduction scheme which can be adopted in the city of Port-of-Spain is the legalization and regularization of the informal economy. The role of peddlers, handicraft makers and other tradesmen cannot be undermined. If well integrated into the formal economy, this ensures not only economic sustainability but also social improvements. Success of such initiatives is evident in Mexico where a simplified tax regime was adopted for small and medium enterprises through various efforts including persuasive campaigns (Verdejo n.d.). As members of the informal economy are usually self-employed and avoid government regulations, they are not entitled to benefits such as national insurance. Hence,

by slowly integrating their practices into the formal economy not only do they contribute more significantly to the economic development of the city, but they themselves have access to the perks such as insurance and are in a better position to undertake formal contracts.

Thus, it is acknowledged that avenues do exist to refine the development plans to ensure its effectiveness in attaining sustainable cities. However, it must be noted that the key component is not in the policy itself but rather a comprehensive implementation stage to ensure that the policies do materialize.

4.3 Revision of Development Standards

The development standards which guide development in the city of Port-of-Spain have been implemented over two decades ago. Given not only the dynamism of an urban area but also the changing global challenges, these development standards are indeed obsolete and require urgent revision. One of the most critical and current challenges facing urban cities which was not a force to be reckoned with in the 1980s is climate change. As it has been noted that the adverse impacts of climate change are inevitable, cities have been triggered to adapt as necessary, especially in Small Island Developing States such as Trinidad and Tobago. To achieve urban sustainability in Port-of-Spain such development standards which allow adaptation to climate change is crucial, yet absent. For instance, it should be stipulated that the construction of new buildings in the area are green and energy efficient. This can be achieved through various avenues.

In the neighboring Caribbean territory of Costa Rica multiple avenues for the creation of green buildings have been identified (McCabe 2010). Given the tropical climate, cross ventilation is promoted to maximize incoming wind to aid in cooling the building. In addition, the use of local woods such as teak is encouraged to curb imports and support the local economy. Furthermore, water management is also encouraged through the recycling of water, for example, using grey water from showers and sinks to flush toilets. Water management is also successfully attained through rain water harvesting.

These recommendations are quite applicable to the city of Port-of-Spain as the tropical climate of high temperature and rainfall also exists in Trinidad. In addition to reducing the utilization of energy, water efficiency can also be achieved. Furthermore, techniques such as rain water harvesting can reduce the frequency and extent of flooding events which are quite common and costly in the low lying coastal city. Hence, through the revision of the development standards by appropriate alignment of controls to the given climatic conditions, the city of Port-of-Spain would be on the path to achieving urban sustainability.

In addition development standards such as site and building coverage should be enforced to accommodate the increasing rainfall events associated with climate change. These coverage standards are formulated to accommodate efficient drainage and reduce flooding events. Given the rapid pace of construction and increasing building density in Port-of-Spain, coverage standards should be carefully adjusted and more importantly implemented in an effective manner.

4.4 Enforcement of Zoning Policies

To achieve the goal of urban sustainability on Port-of-Spain another critical reform mechanism is the enforcement of zonation policies. This is especially crucial to achieve environmental sustainability specifically as in Port-of-Spain there has been blatant disregard for the environmentally sensitive areas. Through enforcement of zoning policies, areas such as the Caroni Ramsar Site can be rehabilitated with the relocation of the Beetham Landfill as the multiple eco-services offered by wetlands must not be undermined.

In addition to environmental protection zones, enforcement of industrial zones is important. While industrial development is somewhat inevitable within the urban area, the zonation

policy must be enforced to ensure that all brown field sites are allocated to industrial activity rather than locating industries on virgin sites. Brownfield sites, that is, areas already contaminated by industrial activity, are reportedly present in Port-of-Spain. Numerous vacant lots within the Sea Lots industrial estate do exist (UDeCoTT 2000) and should be distributed initially before embarking upon development of untouched areas. Thus, through the enforcement of zoning ordinances, environmental sustainability, a critical pillar in urban sustainability can be successfully attained.

4.5 Other Recommendations

While it is acknowledged that urban planning instruments require urgent reform to allow success in their achievement of urban sustainability, key ingredients are vital to ensure the smooth operation of these tools. These critical success factors are generally overlooked as the spotlight is placed on the development of the urban planning instruments themselves, but in the absence of these facilitating factors, urban success remains elusive.

Firstly, to ensure the success of these urban planning instruments, a supportive legislative and administrative framework must be in place. Though the Town and Country Planning Act (1969) is the legislation governing urban planning in the city of Port-of-Spain, "legitimacy is not derived automatically from the enactment of legislation" (Rakodi, n.d.). Rather, legitimacy is attained when the enforcement capability of those with the authority is effective in fulfilling its mandate, that is, they are able to uphold the rules and regulations as stipulated by the legislative framework without any obstacles. Common obstacles to ensuring legitimacy include acts of impartiality towards specific groups which jeopardizes the framework as its integrity is undermined. Hence, in addition to a strong legislation being in place, there must also be a supportive authoritative body to exhibit strict adherence to these laws at all times.

In addition to an effective legislative framework, a cohesive institutional arrangement is crucial to the successful implementation of urban planning instruments. A single overarching agency should be made responsible for the urban affairs, more specifically, an inter-ministerial committee to promote collaboration amongst the overlapping sectors and to avoid conflicting jurisdictions as well as duplication of responsibilities. However, despite such an agency already existing for urban governance in Port-of-Spain, which is UDeCOTT, its integrity has been undermined by a surrounding scandal thereby effectively eroding its credibility to the public. It is important to ensure that this body is independent and free from scandal to be assured public trust and support for success.

This issue of public trust follows on to another critical success factor for the urban planning instruments, that is, increased stakeholder engagement. Given the myriad of stakeholders relevant to the planning process, through the participation of these groups more comprehensive plans can be devised to meet the needs of maximum stakeholders and thereby attain urban sustainability. Such attempts at social inclusion have proven quite effective as noted previously in Asian cities. However despite being implemented in East Port-of-Spain, it has failed mainly due to the lack of political support and inadequate resources (Mohammed 200?).

Hence, another critical success factor for urban sustainability is efficient allocation of resources which can generally be obtained only through strong political support. Resources include technical equipment such as Geographic Information Systems (GIS) software to create baseline information to aid in the tracking of changes to land uses. Also, human resources are quite essential both in numbers and at a required level of training in their respective field given the multi-disciplinary nature of planning. In addition, financial resources cannot be overlooked in its ability to aid in development and implementation of plans.

Furthermore, as aforementioned, tracking changes is important as a tool for monitoring and evaluating the success of urban planning instruments. Through the establishment of

performance indicators, urban planning instruments can be regularly assessed to determine whether they are in fact achieving urban sustainability or urban reform is required. Such indicators can include number of persons per doctor to assess social sustainability and even projected energy consumption rates to determine environmental sustainability.

One other recommendation for the achievement of sustainable cities, though not mandatory but advisable, is the use of economic instruments such as subsidies, tax breaks or other incentives for sustainable initiatives. For instance, if developers are given incentives such as energy concessions for the adoption of solar energy, as is practiced in neighboring Barbados, it is more likely that the construction of green energy efficient buildings will be undertaken and thus contribute to urban sustainability. In Barbados, the Ministry of Finance offers duty free imports of materials for solar panels which have ultimately reduced their demand for environmentally unfriendly fuels (SIDSNet 2010). Hence, for energy efficiency in Port-of-Spain, the Ministry of Energy in collaboration with the Ministry of Finance can offer economic incentives for the harnessing of solar energy.

5.0 Conclusion

In conclusion, it is quite evident that there are numerous urban planning instruments governing development in the city of Port-of-Spain. However, upon assessing the success of these urban planning instruments in their contribution towards the attainment of environmental, economic and social sustainability, deficiencies have been acknowledged. Accounting for the failure of these tools are multiple factors such as the poor implementation strategies, inadequate enforcement capabilities, insufficient allocation of resources as well as poor stakeholder relationships. Thus, the goal of urban sustainability for the city of Port-of-Spain, as upheld by the nation's Vision 2020 remains elusive. Therefore to convert this myth of the sustainable city of Port-of-Spain to a reality, the need for urban reform is advocated. To guide urban reform, multiple recommendations have been put forth to aid in the achievement of the environmental, economic and social pillars responsible for the establishment of a sustainable city. While it is acknowledged that urban sustainability in Port-of-Spain is no more than a myth, the ability of the city to attain sustainability in reality, must not be undermined.

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