National Spatial Development Strategy for Trinidad and Tobago

A Planning Framework To Govern Physical Development

Core Strategy and Regional Guidance


11˚30'
61˚30'
61˚00'
60˚30'
Caribbean Sea
Charlotteville
Tobago
Roxborough
Moriah
Plymouth
Scarborough
Tobago Airport
Canaan
11˚00'
Galera Point
Toco
Venezuela
Maracas
Maraval
Dragons Mouths
Saint Joseph
Tunapuna
Arima
Port-of-Spain
San Juan
Arouca
Caroni
Piarco Airport (Port-of-Spain)
Guaico
Sangre Grande
10˚30'
Chaguanas
Gulf of Paria
Tabaquite
Guatuaro Point
Atlantic Ocean
Rio Claro
Pierreville
San Fernando
Brighton
La Brea
Princes Town
Tableland
Oritoire
Trinidad
Debe
Point Fortin
Penal
Siparia
Basse Terre
Guayaguayare
Galeota Point
Fullarton
Moruga
San Francique
10˚00'
Serpents Mouth
Trinidad and Tobago
National Capital
Road
Airport
Rivers
0
25 Miles
0
25 Kilometers
Venezuela
61˚30'
61˚00'
60˚30'

MESSAGE FROM THE PRIME MINISTER

In our Manifesto of 2010, adopted as national policy shortly after my Government took office, we made a commitment to overhaul land use policy in this country. This is what we said: “All development will take place in the context of a land use and physical planning framework and sustainable development principles will apply. There will be order and purpose in development strategy and execution”. I am happy that we are now in a position to fulfill this commitment.

It has taken some time, led by the Honorable Minister of Planning and Sustainable Development, driven by the Cabinet appointed National Planning Task Force, engaging a full range of professionals in government and in the community at large and involving a number of consultations across Trinidad and Tobago to get this done, but I have come to appreciate that everything takes time, especially if one wants to do it well. I think that this National Spatial Development Strategy is something that can make us all feel a sense of pride as citizens. This is one more promise that my Government has made to our people that has been kept. It is the first major overhaul of physical planning policy since 1984 and takes into account best practice around the world.

Of great significance is the fact that central planning for the facilitation of land development will be aligned with regional planning and community plans for development. This initiative to facilitate greater harmony in development strategy and execution will be a real advance for Trinidad and Tobago, will support a more orderly process for development and will be most beneficial to the communities and the people who live in them.

I have always maintained that development is about people and the structures, infrastructure and system driven philosophically by this National Spatial Development Strategy as well as the desires of people within their own communities, will ensure that people are taken into account as better communities are designed for quality living, good livelihoods and better neighborhoods.

It is a source of pride to me that enlightened policy and strategy to support sustainable development has taken place under my administration. We said we would do it. We have taken the necessary steps to do it well. And we have done it with you for the sake of better development practices in Trinidad and Tobago. Let us continue to build our country together and work together to achieve more for all our people.

Faithfully,

Hon. Kamla Persad-Bissessar, SC, MP
Prime Minister of the Republic of Trinidad and Tobago.

FOREWORD

Together We Aspire,
Together We Achieve

Strengthening the Foundation for Prosperity for All

The National Spatial Development Strategy for Trinidad and Tobago

It has been fifty years since becoming an independent nation. The Government of Trinidad and Tobago presents this **National Spatial Development Strategy (NSDS)** as the fruit of an extensive consultative and deliberative process as we continue the journey towards sustainable physical development.

Policy making is a challenging responsibility. It is imperative to begin the process of policy making with data, facts and information. It is useful to take expert opinion into account because experts draw on research, knowledge, cases, and precedents and can usefully apply what they know to the situation at hand. It is important to tap into the thinking of relevant stakeholders. They can bring local knowledge and unique perspectives to the challenges of the day. Consultation with the wider community is always desirable, first of all to broaden democratic participation and secondly to take into account a diversity of views and perspectives. As we pursued the objective of developing a National Spatial Development Strategy, these considerations were uppermost in our minds and so we have tried, responsibly, to honour and to keep faith with all of the approaches identified above.

We have relied heavily on CSO data and the 2011 Census Report as well as information coming out of Ministries and State agencies. Local, regional and international experts have been engaged and involved throughout the process. Stakeholder consultations have been held in a meaningful way and the National Planning Task Force itself, which drove this exercise over a two year period, consists of a broad range of stakeholder interests. In addition, the Town and country Planning Division were always a vital part of this important exercise.

Two rounds of consultations were held in the process of developing the National Spatial Development Strategy. Firstly, a series of six (6) consultations were held where the public was engaged to formulate its vision, themes, and objectives. The findings from these consultations we captured and subsequently used to prepare the first draft of the National Spatial Development Strategy in April 2013. The draft NSDS was then made available for public comments and suggestions were again invited through the consultation process. At the core of this process is a belief system about the rights and responsibilities of citizens in a democracy to influence and shape the type of society in which they wish to live. During the period April 24 to July 10 2013, five (5) further consultations were held based on the Draft NSDS.

Several hundred attended these. Thousands more were exposed through various forms of social media outreach tailored to the context of the NSDS. Through the consultations as well as social media, many relevant comments and insights were shared by citizens. Specific initiatives were taken to engage the business community and we received constructive feedback. It is reasonable to claim on basis of our consultative approach, the substantial contributions taken into account, and the revision which led to this final document, that as a policy document the National Spatial Development Strategy reflects not just a wide but a wise cross-section of society.

Further to this, a special meeting involving Ministers and public service officials from the relevant ministries addressed the issue of general land use from a planning and sustainable development perspective. And so together, we bring this National Spatial Development Strategy and Land Use Plan as a policy document to you. What is contained here will guide government policy with regard to facilitation of development as well as developmental control of land use in Trinidad and Tobago. It constitutes enlightened policy derived from a deliberative as well as consultative process and it speaks to the fact that we are a small island state, with limited land space which has achieved a comparatively good per capita income but which has equity disparity and which has achieved much but still has a long way to go in sustainable development terms.

The National Spatial Development Strategy has been pursued within the context of a sustainable development framework. As such this strategy strives to facilitate a balance between economic growth, prosperity and progress; conservation of the environment and our ecological systems and socio-cultural harmony and community integrity as part of the development process.

The NSDS takes into account the need to diversify in the seven (7) areas of economic activity that have been identified; geographical diversification of economic development in the context of opportunity and potential ; the migration patterns from Port of Spain, the capital city; the population growth trends in Chaguanas and Arima; the need for the generation of industry and creation of jobs where people live; issues such as traffic management, community development and the geographical spread of goods and services across the country, closer to the community. The strategy also takes into account the issues of rural neglect and underdevelopment and the suppression of individual initiative and entrepreneurial drive which may have been the result of undue control of the development process.

What you have before you represents an overhaul of the overall framework for physical planning for the country. This framework will consist of three levels:

i. This new National Spatial Strategy establishes the broad policy and strategic designations for land use
ii. Municipal Plans and the plan for Tobago which are more detailed and provides the basis for land use and investment decisions. Revisions to plans developed in 2009/2010 are being reviewed within the context of a completed National Spatial Development Strategy and Land Use Plan.

iii. These will be enhanced by Community /Local Area Plans which represent an integrated approach to the best strategic use of resources to enhance the role of Communities in a national physical development paradigm.

The overarching vision which we are seeking to promote is the sustainable development of communities and regions, and the economic development of people and their families, by the best use of natural assets which exist. This is the broad policy with strategic choices for physical development. The relationship between this and regional and community plans will involve an iterative process with the clear intention of harmonious alignment.

We look forward to an orderly and effectively managed period of development ahead as we pursue, in inclusive fashion, our national vision of prosperity for all.

Sincerely,

Dr. Bhoendradatt Tewarie
Minister of Planning and Sustainable Development

NSDS Documents
This document is the **NSDS Core Strategy and Regional Guidance.** The following supporting documents are also available:

NSDS Executive Summary

NSDS Method Statement and Integrated Sustainability Appraisal – describing the process of preparing the NSDS, the methodologies used, alternatives strategies that were considered, and how those alternatives and the Strategy's Objectives were evaluated against broader Sustainability Objectives.

NSDS Evidence Base – a compilation of the factual information gathered and analysed during the preparation of this Strategy, providing an evidence base to inform its Vision, Objectives and Policies. That information has been included in the following documents:

- **Surveying the Scene – Background Information and Key Issues, March 2013**[1]
- **Form Based Urban Planning Codes for Trinidad and Tobago, February 2013**[1]
- **Situational Analysis, July 2012**[2]
- **Project Realignment Report, August 20123**
- **Reports of Stakeholder Consultations conducted during November and December 2012.**[4]

All reports referred to above are available upon request.

[1] Prepared by Globe Consultants International Limited.
[2] Prepared by All-Inclusive Project Development Services Limited. (APDSL)
[3] Prepared by Genivar. Trinidad and Tobago Limited
[4] Prepared by Tracy Wilson, Development Planner.

Key Diagram

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

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List of Acronyms

APDSL	All-Inclusive Project Development Services Limited
CDA	Chaguaramas Development Authority
CEC	Certificate of Environmental Clearance
CEDP	Comprehensive Economic Development Plan
COSL	Commissioner of State Lands
CSO	Central Statistical Office
E-IDCOTT	Eco-Industrial Development Company of Tobago
EIA	Environmental Impact Assessment
EMA	Environmental Management Authority
eTeck	Evolving TecKnologies and Enterprise Development Company Limited
GDP	Gross Domestic Product
GIS	Geographic Information System
GUDF	Generic Urban Design Framework
HDC	Housing Development Corporation
HDI	Human Development Index
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
IMF	International Monetary Fund
ICZM	Integrated Coastal Zone Management
IPCC	Intergovernmental Panel on Climate Change
IPR	Integrated Planning Region
ISA	Integrated Sustainability Appraisal
LSA	Land Settlement Agency
MC	Municipal Corporation
MEEA	Ministry of Energy and Energy Affairs
MLG	Ministry of Local Government
MoE	Ministry of Education
MoS	Ministry of Sport
MSDP	Municipal Spatial Development Plan
MTPF	Medium Term Policy Framework, 2011-2014
NIWRMP	National Integrated Water Resources Management Policy
NEC	National Energy Corporation
NPA	National Planning Authority
NPDP	National Physical Development Plan
NPF	National Performance Framework
NSDS	National Spatial Development Strategy
ODPM	Office of Disaster Preparedness and Management
PA	Protected Areas
PAFD	Planning and Facilitation of Development (Act)
PTSC	Public Transport Development Corporation
SEA	Strategic Environmental Assessment
SDP	Spatial Development Plan
SIDC	Seafood Industry Development Company
SIDS	Small Island Developing States
SPORTT	The Sports Company of Trinidad and Tobago
SWMCOL	Solid Waste Management Company Limited
TCL	Trinidad Cement Limited
TCPD	Town and Country Planning Division
TEMA	Tobago Emergency Management Agency
THA	Tobago House of Assembly
UTT	University of Trinidad and Tobago
UWI	University of the West Indies
WHO	World Health Organisation
WSD	Working for Sustainable Development

PREFACE

The National Spatial Development Strategy is, in essence, a route map to guide the next leg of the continuing journey of national development, a journey that started centuries ago and that people from many cultures have joined and contributed to over time.

Progress has not always been easy but it has been achieved despite encountering obstacles and diversions along the way. The pace has been quickening and the path continues to be challenging. The task at this point is to check the current position, identify the intended destination and plot the best route for the next leg of the journey.

It is clear that the next stage will involve exploring some very different landscapes. Circumstances inevitably change and it may be that the path will sometimes diverge from the one that is currently being mapped out. However, with a clear destination agreed and kept firmly in view, this map should enable possible route variations to be assessed from an informed view-point so that the desired destination can still be reached.

1. WHAT IS THE NATIONAL SPATIAL DEVELOPMENT STRATEGY?

It is almost thirty years since the last national plan, the 1984 National Physical Development Plan (NPDP), was approved. The NPDP reflected circumstances and outlooks of the late 1970s and early 1980s. Since that time, both national and global circumstances have changed. As a result, a new forward-looking planning strategy is required so that physical development can be managed and facilitated in ways that support people's social, economic and physical well-being over a period when some profound changes are to be expected.

The National Spatial Development Strategy (NSDS) provides the framework for decisions about the ways in which the national space will be used and developed over the next decade and beyond. In this context, 'space' includes the land, water and air, for which the people and Government of Trinidad and Tobago are responsible. The NSDS is intended to cover the ten-year period from 2013 to 2023, working towards a vision of desired progress that could be achieved within twenty years - by 2033. The intention is to monitor progress towards that vision – the destination being aimed for - so that the Strategy can be regularly reviewed and amended, and updated as necessary.

Once approved, in accordance with the requirements of the Town and Country Planning Act 1969, Chapter 35:01 or the Planning and Facilitation of Development Bill (PAFD) subject to its enactment, the NSDS will replace the NPDP. The move from a traditional land-use plan to a spatial development strategy is an integral part of the wider transformation necessary to meet the challenges ahead, a process of transformation that places the needs of people at the heart of strategies for sustainable development. Once enacted, PAFD will introduce far-reaching changes to the way the planning system works. In particular, it will give local government bodies - the Tobago House of Assembly (THA) and Municipal Corporations (MCs) - and local communities more influence over the planning and development of the places for which they are responsible and in which they live. The NSDS therefore provides the strategic context for plans and decisions that will be made at all levels.

The NSDS differs from its 1984 predecessor in more than just name. Like the NPDP, it will provide a framework for development planning and development control[5] but it has broader purpose and scope.

Purpose

The NPDP set out land-use planning policy, including specific land-use zones and allocations, for application across Trinidad and Tobago. That approach was logical at a time when most planning decisions were being made at central government level. However, the intention is for the THA and MCs to play greater roles as Planning Authorities (alongside the National Planning Authority) and this will apply to both the preparation of development plans (development planning) and the determination of planning applications (development control). This requires a different approach to both national and sub-national planning. In 2010, the preparation of Municipal Development Plans (MDPs) and adoption in principle by Council of each of the fourteen MCs, represented a significant step in the new direction and the changes due to be introduced through PAFD will enable this to be taken further.

As a spatial development strategy, as distinct from a physical development plan, the NSDS takes a more strategic view, providing:

- a strategic national framework, focusing on clear and logical spatial planning principles, policies and guidance to be followed when the THA and MCs review and prepare Spatial Development Plans (SDPs) for their areas and when decisions are being made on specific development proposals; and,
- a broad spatial development context for key infrastructure and investment decisions.

The role of the NSDS in relation to other tiers of policy and plans is illustrated in Figure 1.

Scope

Land-use planning has traditionally focused on the regulation and control of land. Spatial planning takes a wider, more inclusive approach. By addressing economic, social and environmental matters in an integrated way, it aims to balance and mediate between competing demands, seeking to achieve optimum use of the national space as a crucial resource.

Spatial planning considers all matters that influence, and are influenced by, the ways in which space is used. This includes, for example, transport and movement; health and health-care; education; employment; and, crime deterrence. By considering the interrelationships between such a wide range of factors, spatial planning can provide a key delivery mechanism for achieving sustainable development.

The broader scope of this NSDS is reflected in the process through which it has been produced and will be monitored and reviewed. As illustrated in Figure 2, this is a cyclical process of fact gathering, analysis, policy formulation, implementation, monitoring and review, with stakeholder participation at its core. In the diagram, the process is illustrated in the context of answering a sequence of four questions:

- What is happening?
- What matters most?
- What can be done about it?
- Is it working?

It is expected that a similar process will be undertaken as more detailed SDPs for Tobago and the regions of Trinidad are reviewed and prepared, and that these in turn will feed back into the on-going monitoring and review of the NSDS.

[5]"Development Control" is the conventional term for the processes of requiring, considering and determining planning applications and enforcing against unauthorized development. As the planning process takes on broader responsibilities, with more decisions being taken at an increasingly local level and with greater emphasis on community and stakeholder participation in the spatial planning process, a shift from "Development Control" to "Development Management" is envisaged. "Development Management" is a more proactive approach which places greater emphasis on facilitating sustainable development – an approach that is more consistent with the objectives of the NSDS. This is explained in more detail in Information Box 2.

Planning policy hierarchy for Trinidad and Tobago

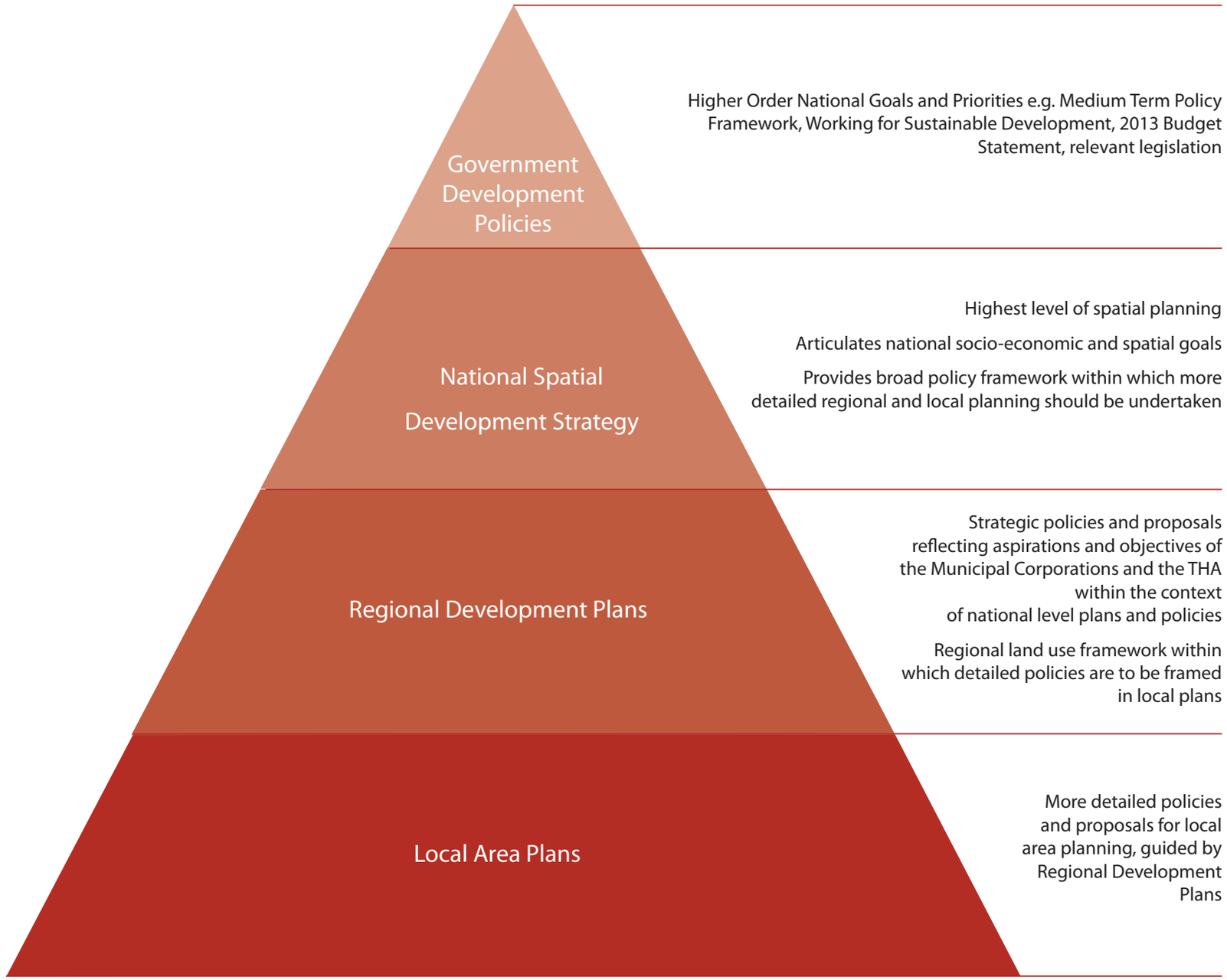


Figure 1: Plan making hierarchy

1. Getting Started
2. Baseline Information Analysis
3. Set Objectives
4. Identify Options
5. Evaluate Options
6. Plan
7. Implementation
8. Monitoring & Evaluation
9. Adjust & Modify

Figure 2: Plan making cycle

Wider Policy Context

The wider policy context to which the NSDS relates and connects is provided at both national and sub-national levels.

National Level

At the national level, the framework consists of strategic statements of policy and guidance. Documents of particular relevance to the NSDS at the time of preparation include:

- the Medium-Term Policy Framework 2011 – 2014, *Innovation for Lasting Prosperity*;
- the National Performance Framework 2012 – 2015; and,
- the June 2012 document, *Working for Sustainable Development in Trinidad and Tobago.*

Medium-Term Policy Framework (MTPF)

The MTPF sets out the Government's policy for action for the period 2011 – 2014, presenting an integrated overview of the steps needed to generate the socio-economic transformation necessary to achieve "Prosperity for All." Strategic priorities envisaged over the period 2011-2014 relate to:

- Crime, Law and Order;
- Agriculture and Food Security;
- Healthcare Services and Hospitals;
- Economic Growth, Job Creation, Competitiveness and Innovation;
- Poverty Reduction and Human Capital Development.

Growth Poles are an important spatial component of the economic strategy set out alongside proposals for greater collaboration at all levels. Significantly, the MTPF acknowledges the role and potential of physical planning in securing the desired transformation.

National Performance Framework (NPF)
The NPF is a tool to measure and assess progress against the Government's policy agenda as set out in the MTPF. The NPF is the first of its kind to be developed in Trinidad and Tobago and its underlying rationale is set out as follows:

"The NPF links national policies and strategies with results and outcomes that can be measured against agreed-upon targets and indicators to be achieved in the medium to long-term. The national performance measures reflect Government's road map and the 'key results' expected from various interventions."

National Performance Framework 2012 – 2015, pg. 1

The NPF additionally outlines a new approach in terms of the clustering of ministries with a view to improving collaboration in the pursuit of national objectives. Such collaboration will be essential for the achievement of the NSDS objectives.

Working for Sustainable Development (WSD)

The importance of maintaining a healthy environment to sustain the desired socio-economic transformation is acknowledged and explored in the document: *Working for Sustainable Development in Trinidad and Tobago.* This places the pursuit of sustainable development at the heart of national policy and all plans for national development that involve resource allocation and utilisation, stating that:

"The Government of Trinidad and Tobago perceives the attainment of sustainable development through the leveraging of resources and application of efforts in such a way that the country produces more than it consumes, that the fundamental principles of environmental sustainability are integrated into its development strategy, and that the well-being of the present generation is improved without severely undermining that of future generations."

Working for Sustainable Development in Trinidad and Tobago, pg. 1

With sustainable development firmly embedded in the MTPF's objectives and strategies, it is logical that the critical relationships between social, economic and environmental well-being also underpin the NSDS.

Sub-national Level

At the sub-national level, policy is currently provided by:

- the MDPs produced by the fourteen MCs in Trinidad in 2010; and,
- the Comprehensive Economic Development Plan, 2013 – 2017 produced by the THA.

Municipal Development Plans

In 2009, the Ministry of Local Government (MLG) embarked on a programme of preparing MDPs for the fourteen MCs in Trinidad. The underlying purpose and objectives of this comprehensive exercise went further than purely physical planning, seeking to incorporate the process of plan making into the institutional machinery of the MCs and to introduce more sectoral elements into what were previously land-use focused plans. The process involved substantial stakeholder and public consultation.

Tobago

The most recent planning exercise to be undertaken in and for Tobago is the *Comprehensive Economic Development Plan, 2013 – 2017*, (CEDP 2.0) prepared on behalf of the THA. This is a second edition of the document that covered the period 2006 – 2010, and it advocates a "re-doubling of the effort" to achieve the transformation proposed in the first edition.

The vision for development expressed in the CEDP 2.0 includes:

- a "branding" of the island consistent with eco-tourism: "*Clean, Green, Safe and Serene*";
- institutional strengthening and development;
- social and physical infrastructural development;
- human capital development;
- industrial development; and
- environmental sustainability.

Careful consideration has been given to the visions, aims and proposals set out in the various sub-national plans, when setting the overall direction of the NSDS and formulating the specific Regional Planning Guidance in Chapter 6.

2. VISION

The proposed Strategy is underpinned by a Vision which outlines the desired future for Trinidad and Tobago and the means of achievement are detailed and developed in the objectives and guidance articulated in later Chapters.

The Vision and elaboration of a Vision statement is a critical step in the generation of a national development strategy which can stimulate the creative imagination, win general consensus and embrace the goals, objectives and aspirations of all sectors of the society, whether public or private, large or small, individual or civil.

By 2033 Trinidad and Tobago will be a nation where people enjoy a high quality of life within a safe, healthy, inclusive and sustainable physical, socio-economic and cultural environment.

To elaborate, the country will be a hub of innovation-driven economic prosperity focused on sustainable development and environmentally-sensitive design standards. Both urban and rural areas will provide good employment opportunities, and city and town centres will cater equitably for the needs of both residents and visitors through the provision of retail and commerce, recreation and cultural facilities, and education and health services in peaceful, secure, accessible and healthy environments.

Food security and energy efficiency will be achieved through innovation, diversification and targeted investment in the agriculture and fisheries sectors in the first instance and the renewable energy sector in the second.

An efficient, integrated and sustainable transport system will link homes, jobs and key services while reducing dependence on private car use and making alternatives more viable and more attractive to use. Benefits of reduced congestion and pollution will be reflected in improved productivity, better health and reduced stress; all supporting a stronger economy.

The benefits of an enhanced quality of life based on sustainable development will be shared across the nation, urban and rural areas alike, so that disadvantage, injustice and poverty are eradicated.

People will be actively involved in the planning of national and local environments, and management of change will be based on transparent and consultative decision-making processes. Through creativity, collaboration and innovation we shall as citizens achieve lasting prosperity together.

Future Scenario

The scenario that follows illustrates improvements that are possible by pursuing the NSDS Vision with determination and consistency in decision-making. It looks back from 2033 at achievements made since 2013.

In 2013 a decision was taken to make some fundamental changes and to follow a different path. As a result, in 2033, Trinidad and Tobago is a better and safer nation to live, learn, work, invest, visit and enjoy life.

Quality of life and the well-being of communities have been improving, whilst impacts on the environment have become much less harmful. The benefits of living in this nation are now enjoyed more fully and more equitably.

Careful and consistent planning has helped to provide and support improved access to facilities across all regions. Communities are safe, prosperous, healthy, inclusive and sustainable. Most people have good quality housing, matched to their needs and well-located in relation to employment, education, healthcare, shopping and other services and facilities. Squatters have either had their homes and communities improved to a healthy standard or have been provided with alternative accommodation in more sustainable locations.

Revenue from the diversified energy industry has been invested in social and environmental improvements supporting the shift to a less carbon-dependent economy. Trinidad and Tobago's communities, businesses, services and learning and research institutions are at the forefront of the low-carbon economy. Most of the energy now used comes from renewable and localised sources. Higher standards of energy efficiency are being achieved supporting increased productivity.

Growth has been delivered in part through new developments, which have been built to high standards of sustainability and design quality. Designing both individual buildings and urban and rural areas with energy efficiency in mind, and shifting towards construction methods using more locally produced materials, has helped to reduce both the overall carbon footprint and per capita carbon emissions.

Careful urban planning, including regeneration and selective, well-designed densification of some inner urban areas has helped to protect productive agricultural land from further urban sprawl. This, coupled with measures to rejuvenate the agricultural and fisheries sectors; to make more productive use of some areas of forest through innovative management regimes; and to encourage urban gardening and farming, has meant that a substantial proportion of the food consumed is produced locally. Food exports have increased with some distinctive local products gaining (or regaining) a global reputation.

By recognising the crucial, life-sustaining services that are provided by natural ecosystems, it has been possible to adapt activities to ensure higher levels of environmental protection. The nation is much more ecologically stable and economically self-sufficient. It has become an economically prosperous and competitive Caribbean state, competing effectively in the global economy. Job opportunities have grown significantly through diversification into new sectors, including green technologies, knowledge-based industries and research, and through eco-based revival and interconnection of the traditional agriculture and tourism sectors. The country is renowned not just for Carnival and a vibrant, mixed culture, but increasingly for its successful, enterprising and "green" economy, which attracts high levels of local and foreign investment.

Development around the Growth Poles and in other key areas has been well integrated, helping to improve overall economic and social well-being. Poverty and social exclusion is being eradicated. Inequalities between regions and social groups are greatly reduced and crime levels have been steadily on the decline. Development of smaller towns and rural settlements has met local needs and helped to reduce regional inequalities.

Communities, businesses and individuals have benefitted from greater accessibility to information and communication technology (ICT) infrastructure and services. A wide range of services are provided on line. These improvements have been welcomed particularly in rural communities, which are now less remote and inaccessible.

Investment in improved and expanded port facilities, energy development initiatives, and maritime services has brought economic benefits, and improved environmental management methods and regulations have ensured that this has not been at the expense of wetlands, reefs or any other valuable and sensitive marine and natural resources.

Investment in infrastructure has been coordinated and targeted towards the most sustainable and viable locations. A range of transport improvements, including improved public transport and planning specifically for the needs of pedestrians and cyclists have helped to minimise further traffic growth. The requirements of those with restricted mobility and other special needs are considered when developments and changes are being planned and implemented. The damaging impacts of waste disposal have been reduced through coordinated and integrated approaches to waste management including recycling and energy generation.

Careful attention has been given to measures necessary to protect people, their homes and property from the impacts of potentially destructive natural events, including coastal flooding (exacerbated by the rise in sea level), storms, landslides and earthquakes. This has required a strong, consistent approach to planning and development that has not always been popular, but increasingly appreciated as necessary.

Trinidad and Tobago's cultural distinctiveness, natural assets and built heritage have been protected and enhanced by careful planning and management. They contribute significantly to quality of life and are a major attraction for visitors. The country has become a world leader in genuine eco-tourism and heritage tourism. This sector provides substantial employment and supports a wide range of businesses, economic activities and environmental protection and enhancement measures.

Trinidad and Tobago is a safer, cleaner, healthier, more efficient, more equitable and more prosperous nation to live. It has emerged as a leader in sustainable development amongst Small Island Developing States (SIDS) and globally, and its people enjoy more fully the quality of life that their islands' environment supports.

Whilst the Vision and the future scenario described above are ambitious, the bar needs to be set high and the targets, challenging and stretching. The alternative is to accept increasing inefficiency, social stress and polarisation, environmental degradation and underachievement. It may be that not all of the improvements described above can be achieved by 2033, but by aiming high, the chances of achieving real and sustainable changes will be maximised.

Translating vision into real change involves setting out clear and achievable objectives and then formulating policies and implementation strategies through which those objectives can be achieved. In the next chapter, the Objectives of the NSDS are defined and an overall Spatial Development Strategy is outlined. Subsequent Chapters provide a suite of integrated spatial development policies and regional guidance, designed to achieve the Vision and meet the Objectives, within the context of the overall Spatial Development Strategy. This document concludes with a preliminary implementation plan speaking to phasing of projects and monitoring and evaluation mechanisms as critical components to be further detailed.

3. OBJECTIVES

The NSDS is structured around twelve objectives. These are derived from and aligned to the Vision set out in Chapter 2, and reflect aims and objectives set out in other national and sub-national policies that provide its context.

The Objectives, grouped under three key themes and set within **an overarching goal of delivering sustainable development**, are presented in no particular order of priority on the following page. They have been tested through an Integrated Sustainability Appraisal (ISA)[6] to both ensure compatibility and evaluate the extent to which they could contribute towards the achievement of sustainable development if implemented rigorously and consistently.

Objectives are an important element of any strategy as they provide the foundations upon which policies are built and pursued. They can be helpful to consider when interpreting and applying policies as, together with relevant supporting text, they can provide insight into the underlying purpose of those policies.

[6]Integrated Sustainability Appraisal (ISA) was the method used to ensure compatibility between the NSDS objectives, overall strategy and policies and the objectives of Sustainable Development. It enabled an optimal spatial development strategy to be selected from alternatives that were considered. A detailed account of the ISA method, the way it was used in formulating and testing the NSDS, and outcomes of the appraisal process itself can be read in the companion document "*NSDS Method Statement and Integrated Sustainability Appraisal*".

THEME	OBJECTIVE
1. STRONG AND RESILIENT COMMUNITIES	**Building strong, diverse regions** To maintain and enhance regional diversity whilst establishing a mutually supportive hierarchy of thriving, resilient and attractive centres to provide accessible services for residents and visitors.
	Building Places for People To ensure that all citizens are able to pursue their working and domestic lives in a peaceful and secure environment.
	Delivering the homes needed To meet the housing needs of all sections of the population.
	Valuing cultural heritage To ensure that the social, economic, spiritual and environmental value of all aspects of the nation's diverse cultural heritage is recognised in decision-making and investment choices.
2. SUSTAINABLE PROSPERITY	**Building a competitive, innovation-driven economy** To diversify and strengthen the economic base and to create and support conditions that enable all to participate and benefit.
	Achieving food security To foster the conditions for a more prosperous agricultural sector and significantly reduce the national food import bill.
	Using our natural resources sustainably To recognise the value of natural resources (including land, air and sea) and to ensure that they are used in sustainable ways, differentiating appropriately between those that are renewable as opposed to finite.
	Meeting the challenges of climate change To adapt the ways in which we live, build, travel, and communicate so as to maximise resilience to the effects and impacts of climate change and to reduce contributions to factors that are adding to it.
3. SUSTAINABLE INFRASTRUCTURE	**Moving towards sustainable transport** To coordinate the use and development of land and the provision of transport infrastructure so as to reduce traffic congestion and promote more efficient, less wasteful and less polluting modes of travel.
	Making the most of Information and Communications Technologies (ICTs) To support the expansion and efficient use of electronic communications networks, including telecommunications and high speed broadband.
	Generating and using energy sustainably To reduce social and economic reliance on non-renewable energy sources and to promote and facilitate the development of more sustainable and environment-friendly alternatives.
	Managing waste safely and efficiently To manage the generation, treatment and disposal of both solid and liquid waste in ways that safeguard human health and protect the environment.

Table 1: NSDS Themes and Objectives

4. HARMONISED REGIONAL DEVELOPMENT

In order to explore alternative ways in which the Vision and Objectives might be achieved, three broad spatial development options were derived by considering:

- the overall direction and requirements of the Vision and Objectives;
- the spatial implications of key social, economic and environmental issues that need to be addressed; and,
- strategic spatial development approaches that have been pursued and / or recommended previously.

The three spatial development options that were considered and evaluated during the preparation of the NSDS were: *Concentrated Development, Dispersed Development* and *Harmonised Regional Development*. These were then evaluated through the ISA process, to identify and assess the positive and negative aspects of each option in a structured way, enabling the extent to which each could be expected to deliver sustainable development overall to be considered and compared with the alternatives. *Harmonised Regional Development* emerged as the preferred option best able to provide the basis for the NSDS.

More detailed information about the alternative spatial options, the ISA process and its outcomes is provided in the NSDS: *Method Statement and Integrated Sustainability Appraisal*. A brief summary of the relative pros and cons of the three options is set out in Table 2:

Harmonised Regional Development This option achieves significant compliance with the economic-themed Sustainability Objectives as it is forecast to facilitate strong, sustainable and equitable levels of economic growth and employment across both islands. It is considered that this option will best aid the diversification of the economy away from dependence on hydrocarbon based sectors and towards the priority strategic sectors such as maritime, tourism and agriculture. This option performs well when assessed against the social-themed Sustainability Objectives. Development is focused on responding to regional strengths and socio-economic needs, leading to general improvement in quality of life. Disparities between rich and poor are expected to reduce, improvements in accessibility to employment opportunities arise and the root problems of social exclusion begin to be confronted. The compatibility assessment indicates some potential minor conflict with Sustainability Objectives 17 and 18, largely due to potential environmental consequences of the option's support of additional, enhanced port and port-related facilities on the west, south-east and north-east coasts of Trinidad and at Scarborough. However, these significant infrastructure proposals will be accompanied by detailed EIAs that will focus on mitigating any adverse impact on the environment and marine ecosystems services. Harmonised Regional Development proposes a policy framework which will delineate urban settlement limits, outside of which non-agricultural and non-essential development will only be permitted in exceptional circumstances. Such an approach will safeguard valuable agricultural land and ecosystems services from the harmful impacts of unplanned and unchecked urban sprawl.
Dispersed Development The option achieves positive overall impacts, but the forecast cumulative effect of these impacts is less positive overall than those forecast for the Harmonised Regional Development option. This option will likely see growth in regional and local centres across the country (as well as potential new towns) with restricted growth within the East/West and North/South urban corridors. Furthermore, dispersal of employment to new regional centres can potentially result in the weakening of Port-of-Spain as a major economic powerhouse in the Caribbean region. The effect of this dispersal away from the main areas can result in urban blight and a spiral of decline in certain neighbourhoods causing social and crime-related issues within areas which already suffer from deprivation. A more balanced and equitable spread of services and employment opportunities across the nation will reduce commuting distances and therefore have the potential to promote opportunities for more sustainable forms of transport, thereby reducing reliance on the private car. Investment in public transport links along the urban corridors will be made more viable and will go some way to supporting changes on travel behaviour. Walking and cycling can become more attractive as the travel distances are reduced, which would contribute to healthier communities. The compatibility matrix identifies crucial inconsistencies between this option and a number of the environmental-themed Sustainability Objectives. The potential planned development of some existing farm land and forest can result in irreversible damage to ecosystems services and hinder revival of the agricultural sector. The development of new settlements and the expansion of local and regional centres can lead to a continued legacy of urban sprawl and the loss of finite environmental resources.
Concentrated Development Whilst some positive benefits are identified for this option, a number of fundamental tensions and negative impacts are associated with it. Concentrated Development is forecast to result in economic growth in existing centres and key corridors, whilst restraining development outside the main urban centres. This option is unlikely to maximise the potential of key emerging strategic sectors. Furthermore, it is likely to exacerbate existing inequalities in job opportunities and unemployment. Employment opportunities will be concentrated in existing urban areas. People living in rural areas and smaller communities will continue to rely on the car and face lengthy daily commutes to access employment opportunities in the Capital and East/West Corridor. The assessment shows significant tensions between socially-themed Sustainability Objectives. A significant proportion of new housing required to meet changing demographic circumstances will be concentrated in main urban areas resulting in a lack of new housing in smaller settlements and rural areas to meet local needs. This spatial option potentially marginalises poor and vulnerable members of society who live outside the main centres and urban corridors. It is likely that restrained development of rural areas will result in these areas suffering decline and underinvestment. Although it is forecast that this option can, overall, lead to environmental improvements over the plan period, these do not outweigh the significant conflicts with economic and social-themed Sustainability Objectives.

Table 2: Summary of the Spatial Development Options

The concepts of concentration and dispersal have been common themes throughout the history of development planning in Trinidad and Tobago. To some extent, they represent two extremes, each of which has strengths and weaknesses. The third option, that of *Harmonised Regional Development* (which might also be described as "dispersed concentration") combines some elements of each of the other two, as well as others that are unique to that particular spatial development option.

The *Harmonised Regional Development* approach, when allied with other national and sub-national policies and interventions, is designed to facilitate:

- sustainable and equitable levels of economic prosperity and employment;
- diversification of the economy away from its dependence on hydrocarbon based sectors towards priority strategic sectors such as maritime, tourism, agriculture, and cultural and knowledge-based industries;
- overall improvement in quality of life for most citizens;
- reduced disparity between rich and poor and less social exclusion;
- improved accessibility to employment opportunities, service provision and cultural and recreational facilities; and,
- a sustainable relationship between economic, social, and natural environments.

The concept of *Harmonised Regional Development* is illustrated in Figure 3. As the preferred approach to spatial development distribution, its tenets have been further developed in the Core Policies and Regional Planning Guidance in Chapters 5 and 6 respectively, and the NSDS Key Diagram.

Harmonised Regional Development

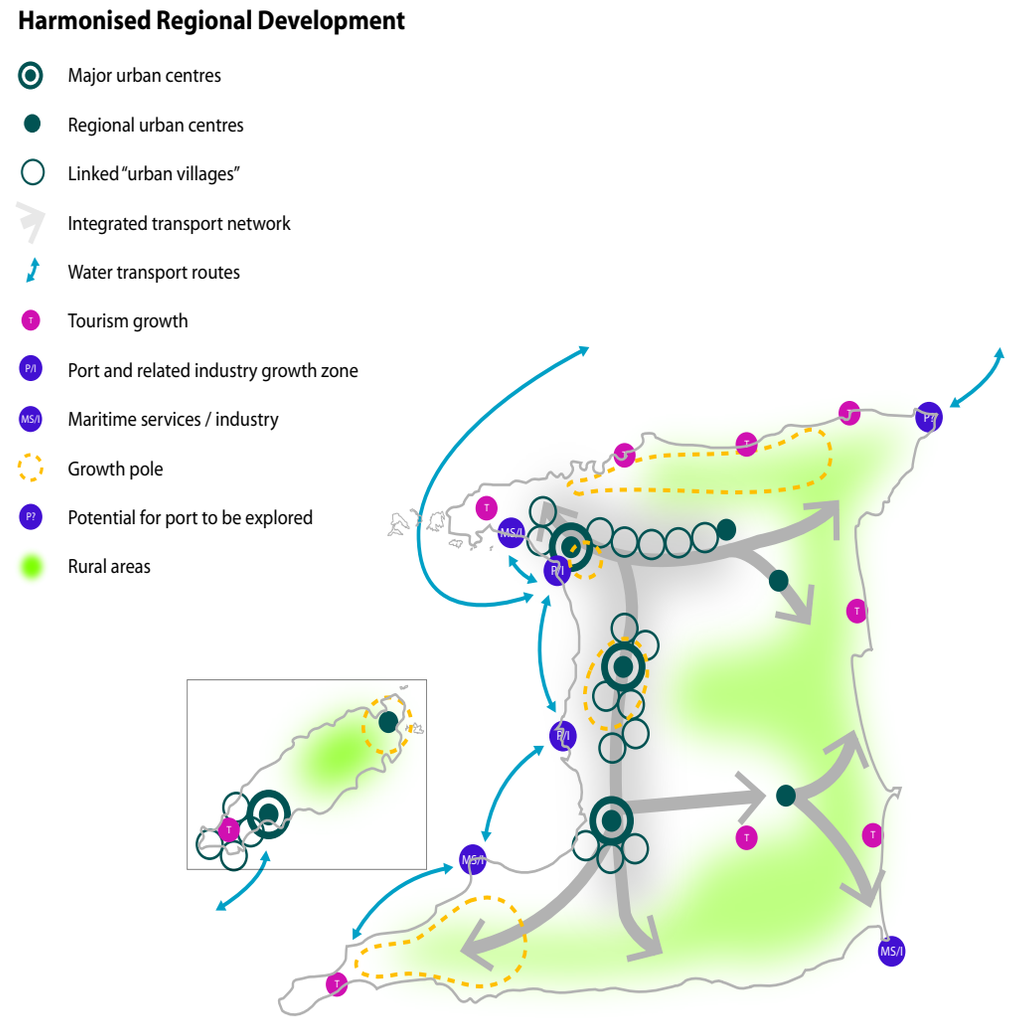


Figure 3: Harmonised Regional Development

Integration and Spatial Efficiency

The spatial planning system deals with complex and wide-ranging issues. These cannot be addressed effectively if they are treated in relative isolation from each other - each in its own "silo." Many of the real challenges to be tackled extend across discrete topic and thematic boundaries. Significant progress towards sustainable development is likely to be achieved only when the interactions and interrelationships between topics are identified and integrated strategies are devised and implemented.

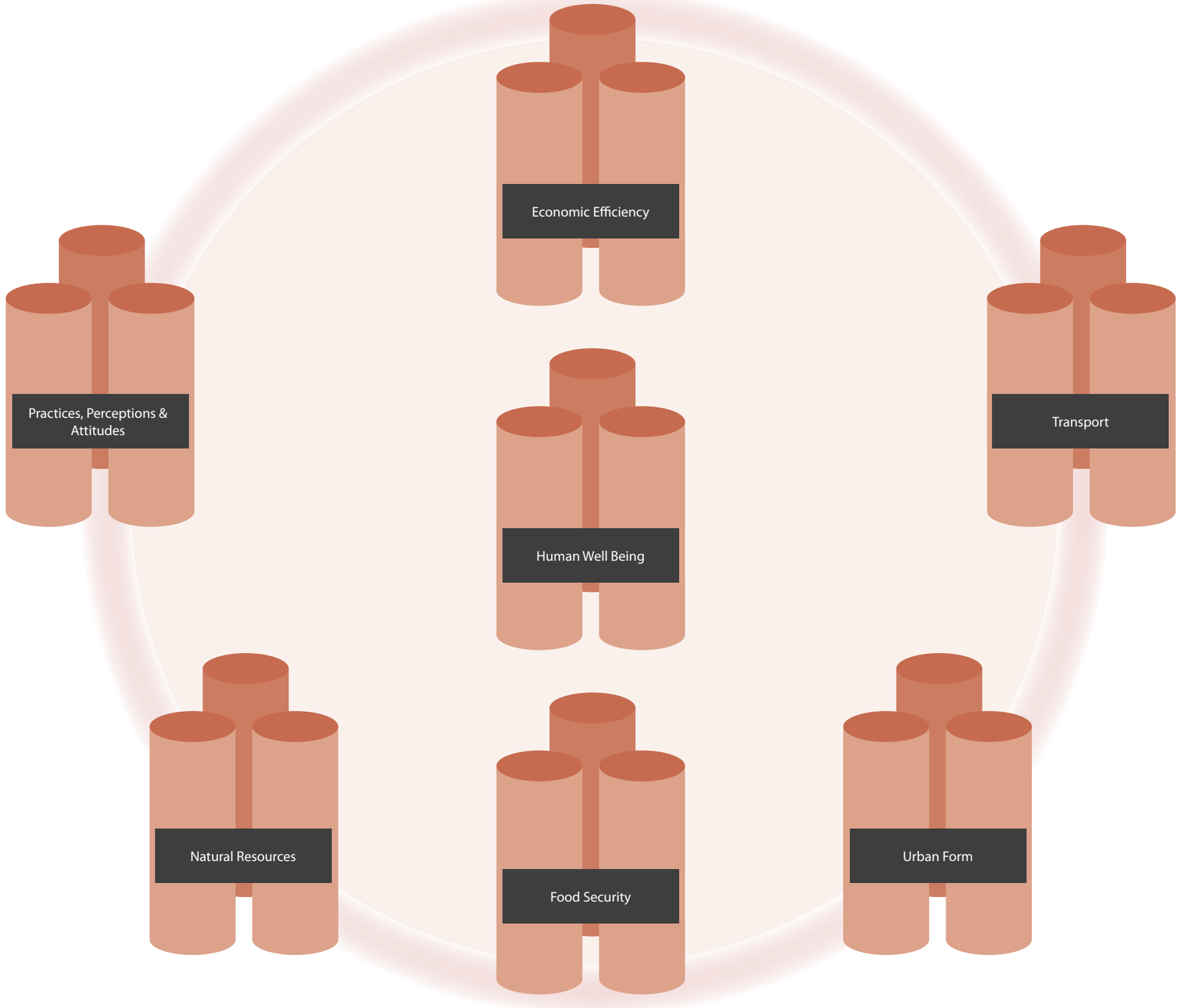


Figure 4: Some of the key issues addressed by the NSDS

To illustrate this, seven important national issues have been identified in Figure 4, viewed from a conventional silo perspective. In Figure 5, the same issues are viewed differently, with interrelationships and integrated strategy solutions outlined. In the same way that the causes and effects of the problems are interconnected and need to be understood, so too the various strategic solutions need to be carefully integrated and interrelated if positive changes are to be achieved.

The theme of the example set out in Figure 5 is sustainable development. As Figure 6 illustrates, Trinidad and Tobago has been increasingly less efficient at converting energy to wealth whilst other countries have become more efficient. This is one of the major challenges the NSDS seeks to address, and why measures to improve spatial efficiency are central to the approach being taken.

Economic efficiency

Measured by the amount of energy used to produce each unit of GDP, Trinidad and Tobago is not producing wealth as efficiently as other countries (see Figure 6). "Structural" inefficiencies need to be identified and reduced.

Solution? Integrated planning and sustainable development.

Transport

Reliance on private cars is high and growing; use of public transport has been declining. Coupled with high levels of congestion, this means a very oil hungry and inefficient transport system and millions of hours lost in congestion each year.

SOLUTION? Integration of transport and spatial planning; a Sustainable Transport Strategy.

Human well-being

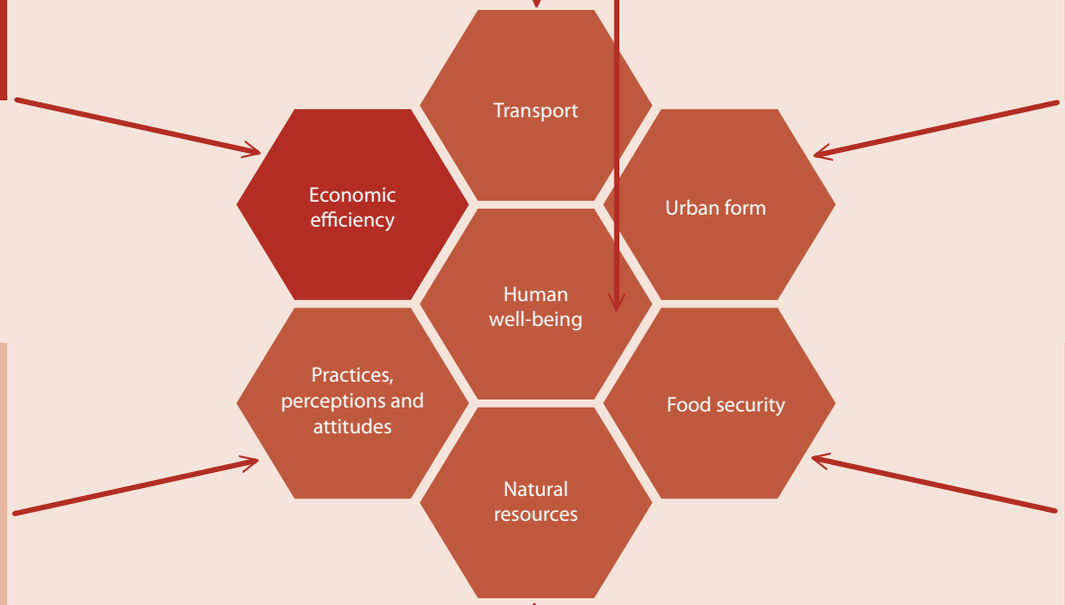
Human well-being is being compromised by time wasted in congestion, stress, paucity of healthy exercise, stress, pollution, poor access to services and healthcare, social and economic deprivation etc.

SOLUTION? Sustainable development facilitated by integrated planning and effective environmental management.

Urban form

Urban growth has been rapid, extensive, mostly car-focussed, and characterised by urban sprawl. Many urban areas are inefficient and congested. Residential areas are often detached from places of employment and services, and designed with little thought given to access by means other than private cars. Recent shopping malls relate mainly to the main highway network, rather than particular communities, also generating extra car miles.

SOLUTION? Integration of spatial and transport planning; urban growth limitation; better urban design; investment in urban efficiency measures; "Transit Orientated Development"



Practices, perceptions and attitudes

Without consistent implementation of policies and adequate enforcement when breaches of planning controls occur, there has been a tendency for plans and strategies to remain unimplemented, for regulations not to be enforced and for public confidence in the system to be low.

Attitudes to energy consumption have been influenced by gasoline subsidies and relatively cheap electricity, leading to insufficient concern for efficiencies and providing little incentive for exploring/developing renewable alternatives.

SOLUTION? Integrated approached to spatial planning, transport, social and economic development and environmental protections; consistency in decision making; enforcement against contraventions.

Natural resources

Oil and gas are valuable, internationally marketable, but finite assets. Trinidad and Tobago has benefitted greatly from having these resources – but oil has brought problems too. Gasoline has been cheap by international standards, literally fuelling high levels of car use, facilitating urban sprawl leading to increasing car-dependency and severe traffic congestion and pollution – a very inefficient urban structure. Cheap electricity, generated by burning natural gas has brought many benefits too, but also comes with environmental and efficiency coasts. Development of alternative and renewable energy sources has not been a priority.

The whole ecosystem is itself a vital and complex natural resource, providing services that support human life but its integrity and health is being compromised by urban development, pollution, and unsustainable exploitation.

SOLUTION? More efficient urban areas and building; integrated transport and land-use planning; protection and conservation of the ecosystem and the service it provides.

Food security

The national food import bill is very high, with associated high energy costs. Rejuvenation of the agriculture sectors would help to reduce this, but large areas of productive land are being lost to urban growth, and many coastal communities are quite remote from mainstream services.

SOLUTION? Integrated and harmonised planning of rural and urban areas; urban growth limitation; protection of productive land from non-agricultural development; farming, fishing and aquiculture incentive and promotion programmes.

Figure 5: Interrelationships between key issues and solutions

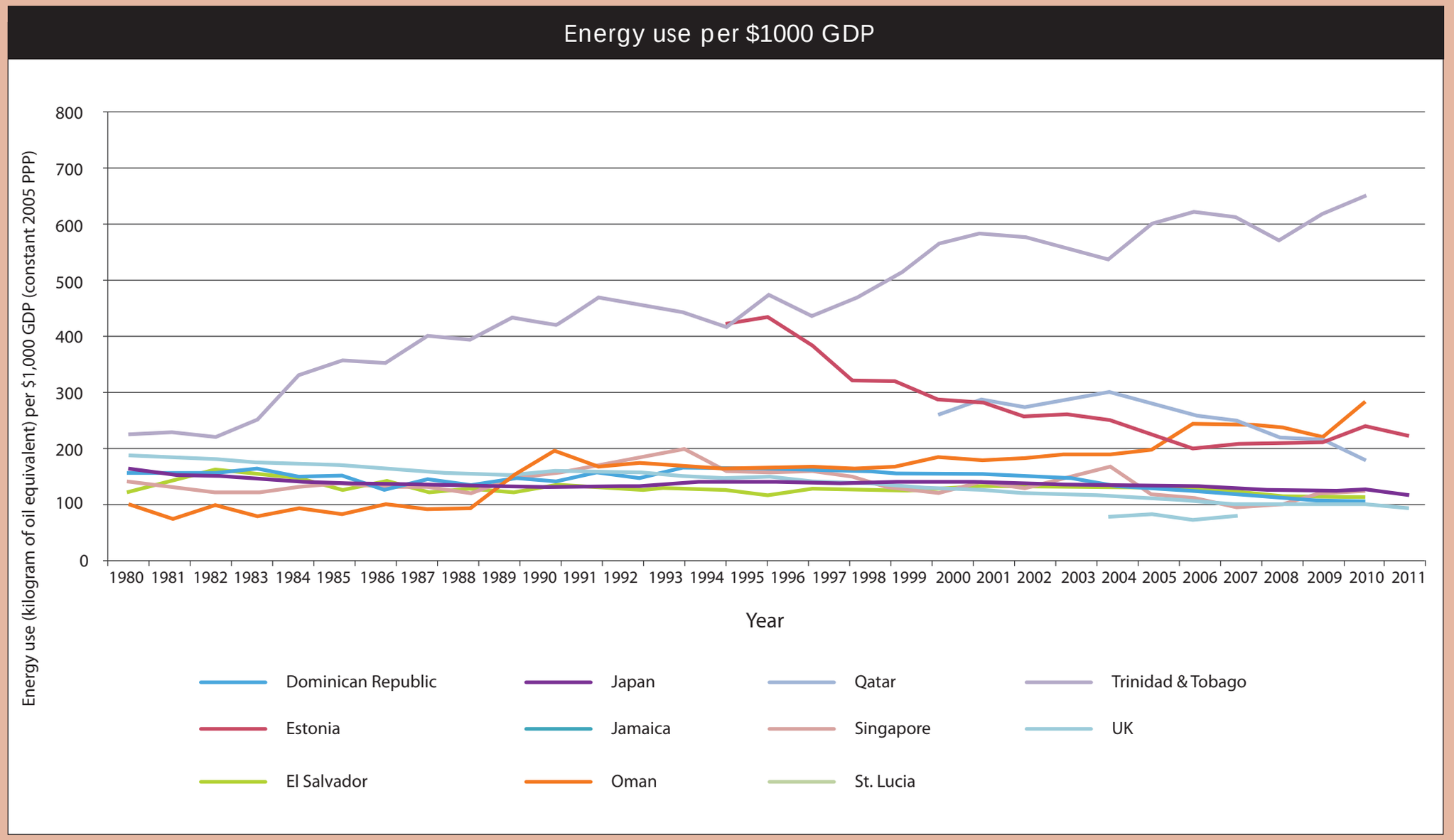


Figure 6: Energy use per $1000 GDP
Source: World Bank, 2011

The example in Figure 5 illustrates that there are often complex connections and interactions between what may sometimes appear to be separate issues. An integrated approach to spatial planning can help to reveal the connections and enable the development of effective, multi-strand strategies that, when pursued in concert, achieve sustainable improvements. This approach is central to the NSDS and its interaction with other related policies and interventions.

5. PRIORITIES FOR SUSTAINABLE DEVELOPMENT

This Chapter sets out Core Development Policies for the whole of Trinidad and Tobago. These are intended to deliver the spatial conditions for achieving Harmonised Regional Development and relate directly to the Vision and Objectives presented in Chapters 2 and 3 (as shown in Figure 7). They are structured around the following four themes:

- Aiming for Sustainability;
- Strong and Resilient Communities;
- Sustainable Prosperity; and
- Sustainable Infrastructure.

Spatial Development Plans (SDPs) at all levels of planning should be consistent with both the Core Policies and the Vision and Objectives, translating them into place-specific policies and proposals. These should all be regarded as material considerations when applications for planning permission are being considered and determined.

The Core Policies enunciate principles that should be applied when more detailed place-specific SDPs are being prepared. In this context, the term "Spatial Development Plans (SDPs)" refers to the SDP to be prepared for Tobago by the THA; SDPs to be prepared or reviewed by the MCs in Trinidad; Local Area Plans across the country; and also any spatial masterplans, planning briefs and other documents intended to provide supplementary guidance. References to "Planning Authorities" are intended to include all authorities responsible for preparing SDPs under the provisions proposed through the PAFD legislation: the National Planning Authority (NPA), the Municipal Planning Authorities (MPAs) in Trinidad and the THA.

Figure 7: NSDS Vision, Objectives and Policies

INFORMATION BOX 1
Population projections

It is helpful to know the expected size and composition of the population for future years, and to know how it might be distributed geographically if current trends continue. However, caution must be exercised when using population projections, as they show how things may be in the future without interventions. There will be strategic interventions which is the main purpose of the NSDS, but in the absence of an established population policy, it is proposed to assume that population growth will follow trends similar to what has obtained between the last two censuses. On that basis very slow population growth is forecast for the foreseeable future with all its implications for employment, and housing demands and services provision.

The Strategy is largely about changing trends. It establishes strategic principles and policies intended to change the status quo rather than perpetuate it, so it has been informed by projections but not unduly constrained by them. It focuses on establishing locational criteria for development, based on sustainability principles, as opposed to seeking to predict the numbers of people who will live in any particular place.

Whilst the preliminary results of the 2011 Population and Housing Census are available, they have not been subject to the detailed analysis that would be necessary in order to underpin a national population policy and spatial projections for the purposes of the NSDS.

Detailed statistically work will need to inform the preparation of detailed SDPs prepared in the context of this Strategy.

5.1 Aiming for Sustainability

Planning for a sustainable future lies at the heart of the national Vision. Sustainable development is accordingly the overarching aim of the Strategy, embracing all the objectives set out under the other themes.

The annotated sketch at Figure 8 provides a brief summary of key issues and approaches relating to sustainable development, illustrating some of the interconnections and showing how integrated spatial planning policies can support progress towards greater social, economic and environmental well-being.

Taken as a whole, the Policies in this chapter constitute what sustainable development means in practice for drawing up SDPs and determining planning applications. Within this context, Policy 1 establishes the overall commitment to sustainability as the basis for growth and change over the next twenty years.

Core Principles

To achieve sustainable development, based on the concept of Harmonised Regional Development, spatial planning activities and decisions should:

- be plan-led, empowering local people to participate in shaping their surroundings, with SDPs setting out a positive vision for the future of each area. Plans should be kept up-to-date and where necessary, based on joint working and co-operation to address cross-boundary issues. They should provide a practical framework within which decisions on planning applications can be made with a high degree of transparency and efficiency;

- be creative in finding ways to enhance and improve the places in which people live;

- pro-actively drive and support sustainable economic development to deliver the homes, businesses, infrastructure, productive natural environment and thriving local places that are needed. Every effort should be made to identify and meet development needs within each area, and respond positively to wider opportunities for sustainable prosperity;

- seek to secure good quality design that addresses both functional and aesthetic expectations and derives from the functional, social, historical, and environmental context of the place;

- take account of the differing but synergetic roles of different areas and communities, promoting the vitality of urban areas, supporting thriving rural communities, and recognising the life-supporting value and nature of ecosystems and the services they provide;

- take full account of the potential impacts of natural events, hazards and disasters, including flood risk, coastal change, land instability and seismic activity, and of the impacts and consequences of climate change;

- encourage and facilitate the conservation and reuse of resources and the use of renewable resources;

- encourage the effective use of land by reusing previously developed land and developing at higher densities;

- contribute to protecting the natural environment (including agricultural lands) and reducing environmental pollution;

- seek multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform more than one function;

- conserve the historic and cultural environment so that it can be enjoyed for its contribution to the quality of life of both current and future generations;

- actively manage patterns of growth to prioritise public transport, walking and cycling, and focus strategic development in locations which are readily accessible by sustainable modes of transport; and,

- take account of and support strategies to improve health, social and cultural well-being for all, and facilitate the delivery of community and cultural facilities and services to meet local needs.

Figure 8: Integrated planning for sustainable development

Integrated planning for Sustainable Development

1 Ecosystems provide a range of life-supporting services, such as water, air-sustaining vegetation, valued natural resources, food, and much more. Fragile, but vital features like the rainforests and swamps require special protection, but the synergy between human life and all elements of the ecosystem needs to be recognised in spatial planning decisions.

2 Hillside developments warrant particular care to avoid destabilising land, changing water flows and causing flooding. Strict and restrictive policies are needed to prevent harmful impacts.

3 Agriculture has been "neglected" for too long, but the rising costs of food imports and the associated lack of food security are causes for concern. Agriculture needs boosting through coordinated programmes of planning and action, whilst ensuring harm to ecosystems is avoided.

4 Tourism brings economic benefits but can cause environmental harm. Emphasis needs to be on Eco-tourism, working with the environment and supporting local economies, including the agricultural and fisheries sectors.

5 Urban development has been rapid, extensive and very land-consuming in recent decades, causing loss of productive land, inefficient patterns of settlement, travel, service delivery and infrastructure provision. A more sustainable approach is required, including more efficient urban forms and better urban design.

6 Climate change is expected to have significant impacts, including more volatile weather, increased intensity of storms and flooding, rising sea level with resultant coastal changes and changing conditions for food production both on land and at sea. Integrated responses are required.

7 Marine ecosystems, particularly swamps and reefs, are valuable because they provide essential life services. At the same time the marine environment plays a vital economic role, providing resources such as energy, food and the basis for much of the tourism industry. Ports, shipping and marine services play vital economic roles and water transport may have an increasingly important role within an integrated transport strategy. The environmental impacts of developing these sectors necessitate integrated planning and management so that the economy-supporting and health and service-providing capabilities of this complex and fragile environments can be maintained.

8 Oil and gas have literally fueled economic and social development for decades, but they have not been used as efficiently as they could be. The aim now must be to make the most of the economic value of these rich but finite resources – and the technological expertise they have generated - making more efficient use of them domestically and maximizing the value gained from international marketing.

9 Renewable energy has much potential to reduce reliance on finite resources of fossil fuels and to enable a shift to a more energy-efficient future. Solar, wind, biological and marine energy sources all have contributions to make.

10 Airports provide vital links with overseas markets, colleagues, cultures and families. Their roles and potential as national gateways need to be supported whilst environmental impacts need to be managed positively.

11 Transport is vital to the economic and social life of the nation but it needs to work much more efficiently. Congestion and associated, inefficiency, waste and pollution require that a fully integrated approach is adopted to move from car dependence to modal choice.

12 Regional development needs to be based on each region playing to its particular strengths, with diversity valued and regional contributions fully harmonised.

INFORMATION BOX 2

Development Management - some key features:

- emphasises the concept of managing development to maximise the achievement of spatial planning objectives, as opposed to simply controlling development;
- encourages discussion between developers and planners before applications for planning permission are submitted;
- involves close involvement of other key agencies, both in making and implementing plans, regarding them as partners in ensuring implementation of actions in the plan, e.g. delivery of infrastructure;
- encourages public participation and consultation at every level;
- takes policies as the starting point when considering development proposals, but calls also for evaluation of those proposals against the strategy's or plan's spatial vision and objectives;
- considers the aims of policies collectively rather than taking each policy in isolation; and,
- asks whether sustainable development objectives are being met in the particular case being considered and seeks to facilitate sustainable development.

Source: Development Management Initial Guidance published by UK Planning Officers' Society in November 2007.

POLICY 1: SUPPORTING SUSTAINABLE DEVELOPMENT

Planning Authorities should work with Government agencies and partners in all sectors, local communities, private developers and others to achieve sustainable development in respect of social, economic and environmental change.

Development will be considered to be sustainable if it is consistent with the Vision, Objectives and Policies of the NSDS and SDPs, where these are up-to-date, relevant and consistent.

Proposals for development should be viewed positively and approved where they will deliver sustainable development as defined in this Policy, unless material considerations indicate otherwise.

Proposals for development that is inconsistent with the principles of sustainable development as defined in this Policy should be rejected unless material considerations indicate otherwise, taking into account whether any benefits of granting permission would significantly outweigh adverse impacts, when assessed against NSDS Policies taken as a whole.

IMPLEMENTATION

- cooperation and collaboration between Planning Authorities, Government/ Ministries and other public bodies
- further policy development within SDPs; and,
- Development Management[7] decisions, evidence based, participatory and hollistic

[7] *See Information Box 2*

5.2 Strong and Resilient Communities

Resilient communities are the foundation for national well-being. They should accordingly be supported and strengthened to ensure that all citizens are able to pursue their working and domestic lives in a peaceful, healthy and secure environment. A thriving and sustainable local economy is generally one of the pre-requisites for this.

Trinidad and Tobago has a diverse range of communities with variation at the level of the regions. The range is illustrated by data on the National Human Development Index (NHDI) in the Human Development Atlas which measures both the national and sub-regional level of human development. These show the Borough of Point Fortin ranking highest overall (0.736), with Mayaro/Rio Claro lowest overall (0.592). Tobago has the lowest household income per capita per year ($20,597 TTD) with San Fernando the highest ($34,367 TTD). San Fernando also had the highest secondary and higher educational attainment rate (78.4%) with Sangre Grande featuring at the other end of the scale (53%).

The data for the regions masks further variation at the community level. Within Port of Spain, there is considerable variation between the toilet facilities of selected communities. Within Cascade, 7.5% of dwellings depended on pit latrines, compared to 28.8% in East Port of Spain and 86% in Sea Lots .

Spatial planning interventions can help, but only as part of wider programmes of concerted intervention bringing together all relevant agencies and stakeholders.

5.2.1 Building Strong, Diverse Regions

At the national level, previous attempts to reduce regional inequalities have sought to balance growth across the regions through the identification of Growth Poles and the classification of settlements into a national hierarchy. These initiatives have had limited success to date and market forces have intensified the existing concentration of development in the urban west (in both Trinidad and Tobago) which has at times been perceived to be at the expense of the development of other regions and communities.

It is important to consider and measure regional growth in qualitative as well as quantitative terms. There is a strong and understandable tendency for those involved in spatial planning to consider "development" and "growth" in quite narrow terms, set in the context of the Town and Country Planning Act's definition of "development" 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 the use of any buildings or other land, or the subdivision of any land".

However, regional development and growth initiatives must be informed by a much broader and more inclusive view. In some cases growth may involve building and physical development. In others, it may be appropriate to focus more on improving social, economic and environmental well-being by, for example, measures such as providing better access to essential services and facilities in a way that is both more equitable and more sustainable (improvements in ICT can play a part in this). Growth does not necessarily require more built development, but clear principles for the location and form of such development need to be applied when required.

In keeping with national priorities, economic growth and social well-being need to be central to the spatial planning of development across the nation. In that context, the role and distinctiveness of regional and local centres must be recognised and strengthened in planning and development decisions. Each region and community should be able to play to its particular strengths in contributing to improved national well-being. The aim is to achieve harmonised development, in forms that are locally relevant and distinctive and from which all can benefit, rather than simply to spread development uniformly across the country.

Nationally, and also within each region, the roles of settlements (cities, towns, villages) differ. Whilst there is variation between and within regions, areas with similar patterns of development exhibit similar issues.

Large urban areas such as the East West Corridor can be considered as settlement clusters within which there are several centres such as San Juan, Tunapuna, El Dorado and Arouca. However, as urban growth has proceeded, the individual identities and functions of such centres have often been either weakened or lost entirely. Efforts should be made to strengthen both the functional roles of these attractor centres – regarding them perhaps as "urban villages" – so that they can play stronger local roles whilst also playing their part in the life of the wider urban area. Their roles in providing a service and social focus for their respective catchment areas should be developed. For example, they should be local centres for employment and service provision (shops, education, healthcare, public administration etc.) and focal points for public transport access.

Developing and improving both the role and the environmental quality of attractor centres in this way can enable them to play a key part in easing urban congestion, by providing employment opportunities and better levels of service provision close to people's homes and acting as hubs within an improved and integrated transport system that will provide attractive alternatives to car travel for many of the journeys people need to make within the larger urban areas. To achieve those aims, urban and local centres need to be made more pedestrian friendly, (the "urban village" analogy may be helpful in envisaging the type of environment that needs to be created) and public transport links between the centres need to be strong.

The same principles should be applied in rural areas, but here the attractor centres will tend to have catchment areas that are physically larger but less densely populated, often containing numerous villages. Under these conditions, it may be more difficult and costly to provide comprehensive public transport access, but priorities should be identified and addressed accordingly. Provision for continuing access by car should be made within the context of creating walkable and liveable centres.

Planning Authorities, either individually or in joint working arrangements, should undertake service audits for all centres on the basis of spheres of influence, identifying those that act (or are capable of acting) as "attractors" and making provision to address service gaps where these are identified.

POLICY 2: SUSTAINABLE REGIONAL DEVELOPMENT

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should ensure that the Regional Planning Guidance set out in the NSDS is given effect. Within that context, the roles of urban and rural centres should be identified and developed, so that each can contribute appropriately to the provision of services and facilities in ways that are consistent with the principles of sustainable development.

Planning Authorities should cooperate on spatial planning issues and associated initiatives and projects that cross administrative boundaries, particularly those which relate to the following strategic priorities:

- homes and jobs needed in the area;
- the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy;
- the provision of health, security, community and cultural infrastructure and other local facilities;
- conservation and enhancement of the natural and historic/man-made environment, including landscape management; and,
- hazard risk management and climate change mitigation and adaptation.

IMPLEMENTATION

- The Development Management process;
- cooperation and collaboration between Planning Authorities and Government/ Ministries and other public bodies.

5.2.2 Building Places for People

Urban Form: Historic and Current Trends

Trinidad and Tobago has experienced rapid and extensive urban growth since the 1980s and almost three-quarters of the population currently live in urban areas[8]. A period of high population growth followed the Second World War and continued into the 1970s, but growth has slowed markedly since then (Section 2 Surveying the Scene – Background Information and Key Issues). Urbanisation has however continued and spread, as shown on the maps at Figure 9.

The final maps in the sequence presented in Figure 9 show the extent of urban development that can be expected if recent trends continue without stronger planning intervention. Under that scenario, the overall urban area will increase substantially over the next twenty years and, as the maps indicate, this will be largely at the expense of productive or potentially productive agricultural land, with significant impacts on sensitive natural assets. Urban growth at this scale would undoubtedly exacerbate existing negative impacts (Information Box 3). Patterns and forms of urban development that have predominated since the 1970s and 80s are not sustainable in the longer term, if for no other reason than that there is a limit to the quantity of land that can be built on without compromising other crucial land uses and environments.

Whilst populations of the core areas of Port of Spain and San Fernando have been declining, there has been continuing from rural to semi-urban areas and inner urban to suburban areas, as evidenced by growth of the East/West and North/South corridors. The maps at Figure 9 are part of a more detailed urban form analysis which shows that urban growth has been largely in the form of low density, car-oriented suburban and ribbon development, the overall effect being increasing urban sprawl. This is especially true of the western parts of both Trinidad and Tobago.

Agricultural land may seem relatively easy and inexpensive to build on, but its conversion to urban development can be a costly process, with many of the costs being externalised i.e. transferred to the community as a whole, rather than being met by developers or landowners for example through lost potential for agricultural production resulting in higher food import costs. As such, urban policies need to focus on restraining the outward low density urban growth that has been encroaching upon fertile agricultural land.

Even though population growth has slowed, urban growth has continued, suggesting that urbanisation has been stimulated less by a need to accommodate more people, than by other demographic changes and socio-economic factors. Achieving the goal of sustainable urban development will require a radical change of approach informed by an understanding of factors that have been driving sprawling urban growth in recent decades (Information Box 4). However care should be taken to consider all consequences of policies and actions (Information Box 5).

INFORMATION BOX 3

Negative Impacts of Urban Sprawl

- Low population density, tending to make the costs of providing adequate servicing and infrastructure high;
- High levels of energy and water consumption (single-family houses are usually larger in surface area and thus less efficient in terms of consumption of energy and water);
- Inefficient spatial relationships (often resulting in excessive travel times and distances, with associated congestion, loss of time and finite resources, and pollution);
- Coalescence of previously distinct settlements and communities;
- Non-descript urban environments (lacking in local identity and sense of place);
- Commercial development detached from the urban cores;
- Extensive areas of low density industrial development;
- Substantial loss of productive agricultural land;
- Loss of forest and other natural resources to quarrying and other urban and industrial activities; and,
- Inappropriate development in environmentally sensitive areas.

Note: This is an illustrative list and should not be interpreted as suggesting that these have been the only negative impacts.

[8] *2012 Population and Housing Census Visitation Records*

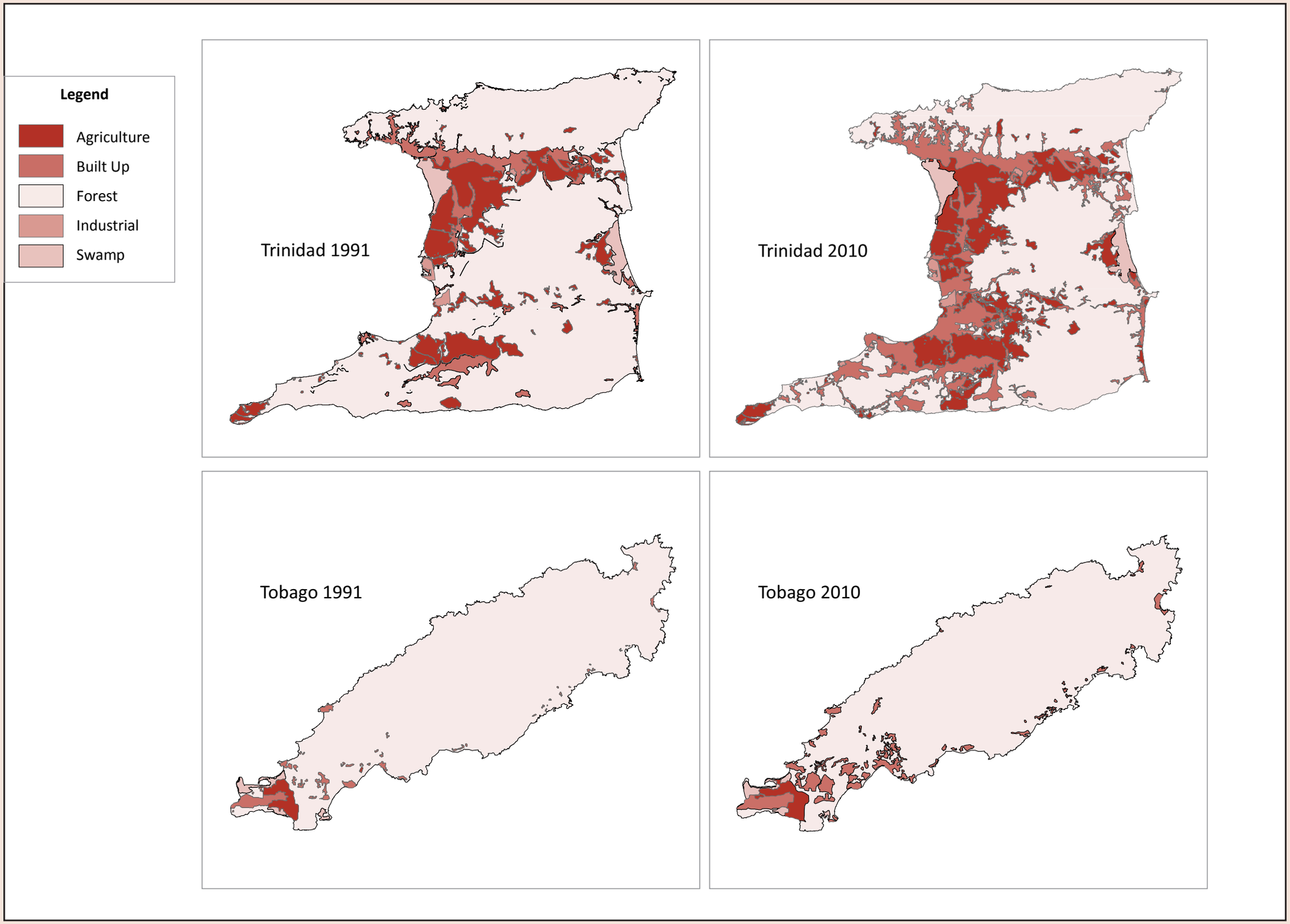


Figure 9: Evolution of Trinidad and Tobago's urban footprint

INFORMATION BOX 4

Factors that have driven urban sprawl

- Low fuel / travel costs;
- Rapid and substantial growth of car ownership / availability;
- Absence / under-enforcement of restrictive land-use planning policies;
- Availability of relatively inexpensive land for development beyond pre-existing urban areas;
- Absence of effective urban design guidance and policies;
- Poor social and environmental conditions in some of the core urban areas, encouraging people who can afford to do so to move out;
- Quality of life perceptions;
- Smaller households;
- A "traditional" preference for low-density development.

Note: This is an illustrative list and should not be interpreted as suggesting that these are the only relevant factors.

INFORMATION BOX 5

Caution!

It is important to consider the intended as well as unintended consequences of policies and actions.

One aspect of urban economics associated with this approach is particularly complex: limiting the supply of new land for development can lead to increased property prices. For existing homeowners, this increases the value of their assets. However for those on low (or no) incomes, this can price them out of mainstream housing, leading to more squatting.

A thoughtful affordable housing programme should, therefore, be linked with city centre regeneration and urban footprint control.

INFORMATION BOX 6

Urban Change

As countries develop, the trend is often that as families become wealthier, many tend to move to the peripheries of cities as they look for larger houses and what may be perceived as a better quality of life. This leads to expansion of the urban footprint. The situation appears to be particularly complicated by several factors. Detailed analysis of demographic and urban development patterns has shown that the populations of some main city and town centres and inner areas have been declining. For instance, the population of the urban core of Port of Spain has reduced considerably in recent decades. This has been linked with waves of sub-urbanisation. Accompanying this, in what were once relatively affluent central residential districts, such as Woodbrook, St Clair, Belmont and St James, former residential properties have been converted into business uses. At the same time Beetham Gardens, Sea lots and Laventille have not experienced any significant changes in population. These can be considered high hazard risk areas and include low-lying flood-prone areas alongside areas of unstable hillside, and are places where basic facilities are often inadequate. The urban situation has become increasingly complex.

Spatial and Urban Design

Whilst urban sprawl has been a significant characteristic of growth since the 1980s, such development was not a deliberate aim of the NPDP. The strategies in the NPDP emphasised growth in population and the objective of achieving an optimum spatial distribution. However, actual population growth fell short of projections and the strategies regarding spatial distribution overcame neither the inertia of the existing spatial pattern nor the forces of unrestrained development trends . It is important that these lessons be applied, so that a more sustainable and plan-led approach to further development may be taken, as opposed to allowing a continuation of existing trends (Information Box 6).

Restricting further growth of the urban footprint should be a priority for planning policies and decisions. The underlying objective will be to ensure as far as possible that:

- less land will be consumed;
- infrastructure costs should be lower, because compact communities require fewer miles of roads and utilities;
- ground and water polluting run-off can be reduced; and,
- overall, there will be fewer areas of impermeable surface to block aquifer charging.

However, constraining the spatial expansion of urban areas will only be effective if efforts and resources are simultaneously directed towards improving the efficiency and quality of existing urban areas. A twin-track approach is required and these two aspects are the focus of Policies 3 and 4.

Spatial Design is the process of shaping the physical setting for life in cities, towns, villages and rural areas. It is the art of making places and it integrates the design of buildings, spaces and landscapes into the use of such places.

The quality of places, whether urban or rural, affects many aspects of life. Creating better places is important mainly because it can improve the quality of the life for people who live, learn, work and spend time in them. The objective is not to create better places for the sake of doing so, but rather to create environments that enable people to live more healthily, productively, securely and harmoniously, whilst treading less heavily on the environment and its life-supporting ecosystems.

The planning process involved in bringing about better, more efficient, more inclusive, more attractive and more sustainable places is in large part also a design process. In that context, spatial planning itself should be seen as a creative design process, as opposed to an administrative, regulatory system.

It is essential that the places that are created, changed and improved over the period of this NSDS embody soundly based design principles. Achieving good design should be regarded as the responsibility of everyone involved in the development process, with spatial planning interventions aiming to ensure that high design standards are both expected and delivered. Indeed, there is a critical link between urban design and the achievement of the NSDS Vision and Objectives.

POLICY 3: PROMOTING SUSTAINABLE URBAN AND RURAL DEVELOPMENT

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should:

- delineate appropriate settlement boundaries to limit the outward extension of existing urban areas, consistent with the need to safeguard agricultural land, prevent urban encroachment into forests and protected natural areas and restrict urban sprawl and the coalescence of settlements;
- promote the development of infill and previously developed sites and other sites that are already served by or near existing infrastructure;
- plan for mixed use rather than single-use zones wherever feasible;
- promote mixtures of uses that are mutually supportive and compatible and create urban synergies;
- formulate site-specific urban design parameters and performance criteria to achieve high standards of urban design and efficiency;
- prohibit urban development of:
  - hillside sites above 91 metres elevation and on gradients steeper than 1 in 4 in line with the Guidelines for Hillside Development for the Northern Range;
  - land which is identified as habitat for any endangered species;
  - land close to wetlands and sensitive water courses (unless adequate measures to mitigate and compensate for negative impacts are included); and,
  - productive and potentially productive agricultural land.
- prohibit urban development involving vulnerable uses in areas of high hazard risk (see also Policy 20)
- limit built coverage of water catchments to no more than 30%, to reduce irreversible degradation of water sources and the ecosystems they support;
- reduce dependence on car travel and associated environmental impacts by encouraging development patterns that allow for walking, cycling, or public transport as alternative, safe and convenient means of access to necessary services;
- encourage compact development patterns in order to use land efficiently and support a range of transportation options;
- promote residential development within convenient walking distance (approximately 15 minutes' walk) of public transport access points and basic community services;
- ensure that development is located within reasonable proximity to emergency services;
- ensure that strategic new developments include provision for adequate public open space (gardens, recreation venues, sports fields, etc.);
- minimise significant site engineering for new development;
- ensure that measures are taken to prevent erosion, including minimising the removal of the topsoil and vegetation and compensating for such removal where necessary; and,
- ensure that appropriate measures are taken to reduce storm-water runoff and minimise impacts of new development on natural drainage systems and ecosystems.

IMPLEMENTATION

- Development Management decisions, including requiring applicants for planning permission to include appropriate details in design statements required under Policy 4 where these concerns are relevant;
- public education programmes; and,
- policy enforcement, including area specific guidelines such as the Guidelines for Hillside Development for the Northern Range (Cabinet Minute 331 of 2012)

Urban Design is Spatial Design applied specifically to urban places. With approximately three-quarters of the population living in urban areas, effort is needed to improve the way such places function. The form and shape of cities, towns and villages affects most aspects of life. Even those who neither live nor work in obviously urban areas depend on such areas for a wide range of services, like schools, shops, markets and healthcare. This aspect of spatial planning should be made more effective in order to improve and support national environmental, economic and social well-being.

Port of Spain and the Capital Region have the makings of a World City, combining a highly distinctive natural setting; places with distinctive townscape and architecture; and, the economic and cultural vibrancy that great cities exude. Inclusion of Port of Spain in the Emerging Sustainable Cities Initiative (an Inter-American Development Bank programme) is an indication of the raised profile both the city and the nation is achieving and the potential for innovative and locally relevant approaches to sustainable urban development to be pioneered here.

Scarborough and San Fernando have distinctive character and offer the potential for enhancement. Indeed all urban areas could benefit from a new approach to planning and design so that they can start to work, feel and look better. Improved urban design can make a significant contribution towards making life better for every community.

Policies set out in this NSDS are designed to produce forms of urban development that are better planned and designed; consume less land and fewer finite resources; are more efficient (economically and environmentally); and are less inherently polluting and more sustainable. Good design plays an essential role in creating such places and in doing so it adds social, economic and environmental value. It should be championed, invested in and nurtured to send a positive message about change and the benefits that high quality places can bring to existing and new communities.

Urban Design Basics

Whilst closely related, Urban Design is not the same as architecture. Architecture is mainly about designing buildings whereas Urban Design is concerned more with designing whole places. It looks at relationships between buildings, and between buildings and the spaces in-between them and it goes much further: it is concerned not just with the appearance of places, but with the way they work and the interplay between the social, economic and environmental factors that shape urban places and are in turn shaped by them. Urban design bridges the gap between land use planning and architecture.

Major building and infrastructure projects, "flagship" or "landmark" buildings have a role to play within an urban design context, but it is the quality of the everyday place and daily life that makes the biggest difference. Urban design concentrates less on individual buildings and more on the relationships between buildings and the public realm. Urban design is about more than buildings. Well-designed and well-managed communal spaces are essential for communities to flourish by creating a sense of belonging, and promoting social cohesion and interaction, which can contribute to a reduction in crime and anti-social behaviour.

As Urban Design is by definition a *design* process, the basic objective is to achieve good design. There are few hard and fast rules, and planning policies and guidance should avoid being over-prescriptive in their approach, but there are certain clear objectives and principles that should be observed.

In simple terms, a well-designed object meets the following criteria:

- Aesthetic;
- Functional;
- Sustainable;
- Cultural; and,
- Health and Safety.

Simply put, it feels right; it looks good; and it works well.

Whilst some criteria involve objective evaluation, others will be a matter of judgment, hence it is essential that judgments and decisions involved in the urban design process are well informed.

In 2009 a Generic Urban Design Framework (GUDF) was prepared for Trinidad and Tobago, showing how existing places may be adapted and changed over time to iron out problems and shortcomings, and explaining how similar problems can be avoided when new places are created – by designing them out from the outset. The GUDF influenced the MSDPs that were adopted by the 14 MCs. The GUDF has, therefore, already started to change understanding of the relationship between spatial planning and urban design. It was produced for that purpose and contains clear, well-considered and well-tested principles and criteria that can be used consistently when assessing the qualities of existing and planned urban places and developments. In accordance with those principles, developments should contribute to places being:

- **Distinctive** (having clear identity, responding to local character and sense of place);
- **Safe** (secure and welcoming);
- **Well connected** (easy to get to and move through);
- **Adaptable** (buildings and spaces designed in anticipation of the need for change so that their quality can be maintained over time)
- **Easy on the environment** (minimising pollution and damage to the ecosystem, and responding to their landscape context)

Urban design should be based on an understanding of each place and the ways in which it is used. This involves identifying the strengths and weaknesses of places, developing a vision or plan of what can be done to improve them and taking appropriate actions as opportunities arise. Ensuring that places are well designed should be a priority for everyone involved in shaping and developing them. The GUDF explains how methods such as Placecheck[9] can be used to enable communities to participate actively in this process. Urban design also has a role in terms of initiatives for addressing crime (Information Box 7).

INFORMATION BOX 7

A framework for designing out crime

Concept	Design and Management Actions	Beneficial Outcomes
1. SURVEILLANCE		
Formal surveillance	Lighting Policing CCTV	■ Supervision ■ Guardianship ■ Reporting of offences
Informal Surveillance	Windows looking on to streets and spaces "Transparent" boundaries (walls, fences etc designed and maintained to be "see through" or "see over")	■ Supervised use of public realm / public space ■ Challenging of offenders
2. POSITIVE REINFORCEMENT		
Activity Support	Design places and buildings to guide people through safe routes and spaces Locate vulnerable activities in safe areas	■ Encouragement of legitimate use of public realm / pubic spaces ■ Discouragement of offenders ■ Positive social stigma
Image Management / Maintenance	Graffiti-resistant surfaces Building variation (colour, design, materials etc.)	■ Use of public space ■ Maintenance of environment ■ Sense of ownership
3. ACCESS CONTROL		
Boundary Definition	Delineation between public and private space Symbolic and physical boundaries	■ Assertion of control over public and private space ■ Identification of offenders
Target Hardening	Mechanical locks Security of residential, commercial or other occupiers	■ Deterrence of offenders ■ Security of residential, commercial or other occupiers

Adapted from Gibson and Johnson in CPTED But Not As We Know It: Investigating the Conflict of Frameworks and Terminology

[9] Placecheck is a method of assessing the qualities of a place, identifying what improvements are needed, through a comprehensive range of questions. Details can be found at www.placecheck.info

INFORMATION BOX 8
Design Statements

Matters that should be addressed in Design Statements (Policy 4) include:

- consideration of local character, in particular how the development positively relates to and connects with the place in which it is proposed, taking account of scale, density, materials, appearance, landscape, layout and access, and other relevant matters;
- sustainable use of natural resources and efficient use of energy;
- impacts on topography, hydrology, land drainage and ecosystems;
- how the development as a whole, including buildings, transport infrastructure, and public and private spaces around buildings, is fit for purpose, safe, durable, efficient and attractive, including the use of innovative or original architectural approaches where appropriate;
- consideration of residential and local amenity; and,
- design principles and requirements set out in the GUDF and up-to-date planning standards, codes and performance criteria approved and adopted by the Government, and Planning Authorities.

POLICY 4: DESIGNING AND CREATING PLACES FOR PEOPLE

To ensure that principles of good design are considered fully when development proposals are being formulated and are embodied in developments that are carried out:

- Planning Authorities should ensure that appropriate design policies, standards, codes and guidance are set out clearly in the SDPs and related documents, and are given due weight when proposals for change and development are being considered;
- Applicants for planning permission should be required to submit a Design Statement (Information Box 8) with every planning application relating to significant development (see note 1 below) explaining how principles of good design (see note 2 below) have been taken into account in formulating the application proposal;
- Design Statements should be taken fully into account when related planning applications are being considered, with good design supported and poor design ejected;
- Design Review Panels should be established, bringing together a range of appropriately qualified and experienced design and development professionals and members of the public to provide independent and objective design advice to assist Planning Authorities in:
  formulating the design components of SDPs and related standards, codes and guidance; and,
  considering the design aspects of planning applications relating to significant development proposals.

Notes

In this context:

1. *"significant development" means any development that can be expected to have an appreciable impact on the character or appearance of the place where it is proposed, affect the way that place functions or impact on the way that it is perceived and used; and,*
2. *"Principles of good design" include the principles, criteria and qualities referred to in the GUDF.*

IMPLEMENTATION

- The Development Management process, including the requirement for Design Statements to support planning applications;
- collaboration and cooperation between design, engineering, environment, and planning professionals;
- review of design standards and criteria;
- public education programmes (for example dedicated space in relevant public offices where models can be viewed, to help give the public a better appreciation of the importance of designing within the larger context); and,
- establishment of Design Review Panels.

Standards and Codes

General urban design principles and policy guidance, criteria and procedural guidance are outlined in this Strategy and set out in more detail in the GUDF.

Existing Planning Standards should be replaced with area and place-specific local guidance and policy (consistent with principles and policies contained in this Strategy and the GUDF) to be included in SDPs. These may take various forms, including: character appraisals; vision statements; local design criteria; Form-Based Codes; and performance-based design criteria.

Design Review

Architectural, landscape, urban design and environmental design is a central component of any sustainable physical development. This means that any developmental strategy or process must incorporate and ensure provision for the active involvement of qualified architects, engineers, environmentalists, planners and members of the public, including the business community, and development subject to design reviews undertaken by independent, qualified experts drawn from these disciplines. These reviews must then inform consents. In this way functional, social, historical, aesthetic and environmental criteria will be effectively evaluated and considered.

Proposed development will thus be encouraged not simply through its conformity to minimum standards and requirements but the level to which it responds to commonly held objective and qualitative measures and therefore longer term sustainability.

Design Review Panels should be established in order to provide well-informed advice to assist both Planning Authorities and applicants for planning permission in achieving high standards of design in the built environment. Planning Authorities may involve Design Review Panels when preparing SDPs, planning/design standards and other plans and documents with significant design content.

Ideally, development schemes and proposals should be presented for the advice of the Panel at a stage when amendment is still possible without causing undue additional work for the designer(s). Panels should be independently appointed and with rotational membership. The composition of each Panel should relate to the particular development(s) and matters that may be under consideration in each particular case.

Healthy Communities

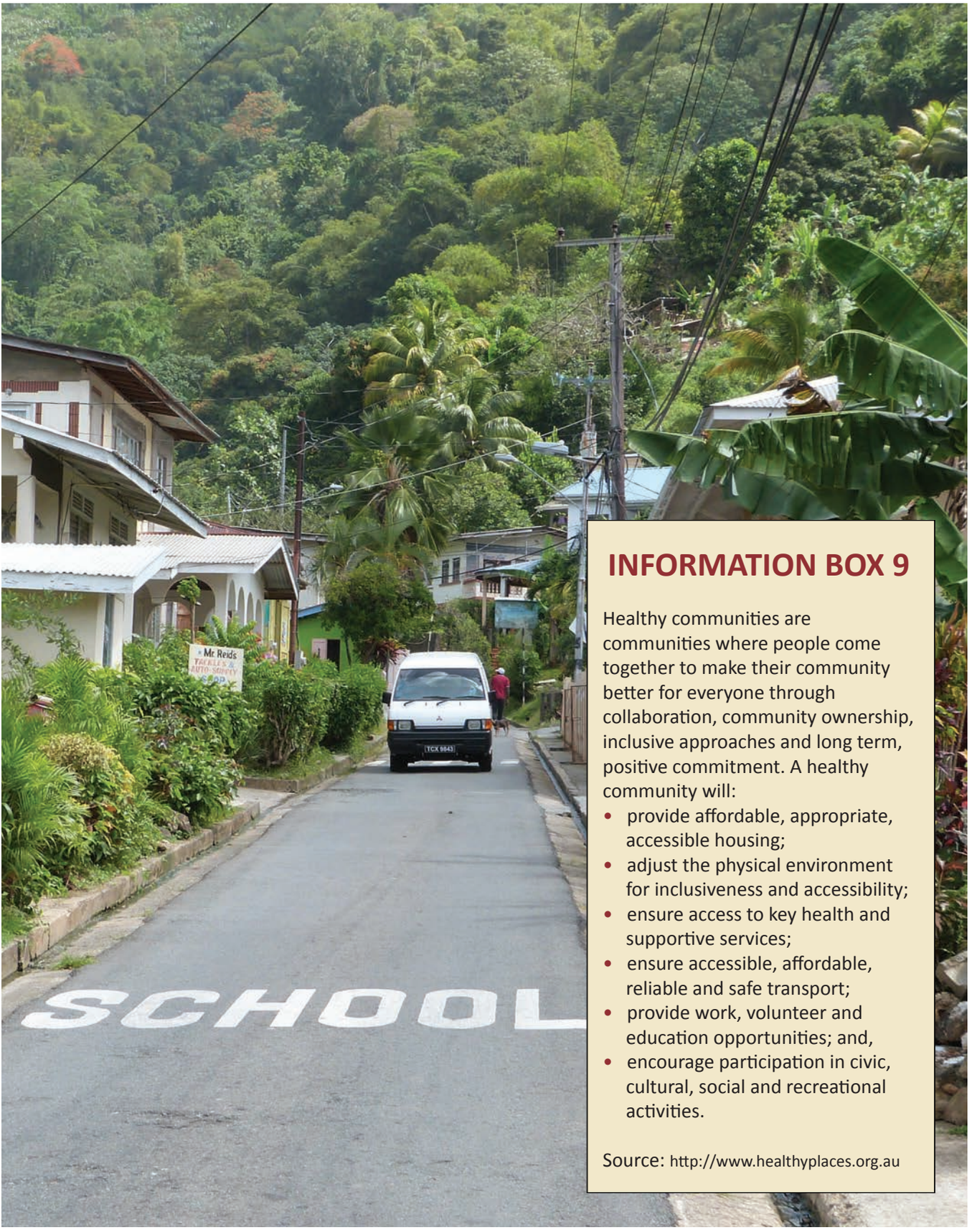
People need convenient and safe access to good education, employment, health-care, shops, services, sport and recreation and other facilities. The relative locations of the places where people live and the services and facilities they need access to must be a central consideration for the development planning system. Those relationships have far reaching implications for the social and economic fabric of society and how it relates to the environment. In recent years, development has spread across previously undeveloped land, often in locations chosen more for their ease of access to highways and main roads than for their proximity to particular communities. Allied to other aspects of urban sprawl, squatting and other unauthorised land uses, this has resulted in increasingly economically inefficient and environmentally unsustainable patterns of development .

The adequate provision of schools, health centres, community centres and other social and welfare facilities in accessible locations can facilitate citizens in accessing such services in their local communities, reducing the need to travel long distances. Effective interactions are essential to both social and economic well-being, and places where people can meet and exchange information and ideas can play crucial roles in enabling productive and mutually supportive interactions to take place.

Improved quality of life demands the thorough integration of social infrastructure provision with policies that affect where people live and work, recognising that different types of infrastructure are appropriate to different places within the urban and rural structure.

There is a strong relationship between settlement size and the levels of service that can be supported. However, through the optimisation of Information and Communications Technology (ICT) capabilities, good quality roads, public transport, information about services and appropriate outreach provision, access to a wider range of services can be improved.

SDPs should address the issue of settlement structure and service integration at a strategic level for their areas. As part of this process, Planning Authorities should work closely with Government ministries, agencies, and each other, to ensure that, where there is an identified local need, existing resources are not lost and they support appropriate proposals for new social facilities. Where there is an identified shortfall in a particular type of facility, or where significant new housing or employment allocations have been made, specific sites should be designated for future provision.



INFORMATION BOX 9

Healthy communities are communities where people come together to make their community better for everyone through collaboration, community ownership, inclusive approaches and long term, positive commitment. A healthy community will:

- provide affordable, appropriate, accessible housing;
- adjust the physical environment for inclusiveness and accessibility;
- ensure access to key health and supportive services;
- ensure accessible, affordable, reliable and safe transport;
- provide work, volunteer and education opportunities; and,
- encourage participation in civic, cultural, social and recreational activities.

Source: http://www.healthyplaces.org.au

POLICY 5: PLANNING FOR HEALTHY COMMUNITIES

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should:

- take account of social infrastructure needs and ensure that adequate provision is made for new services and facilities where they are required to enhance the sustainability of communities;
- guard against the loss of valued facilities and services;
- ensure that established facilities and services are able to develop and modernise in a way that is sustainable, and retained for the benefit of the community;
- ensure an integrated approach in considering the location of housing, economic uses and community facilities and services; and,
- aim to achieve places that promote:
  - safe and accessible environments where crime, disorder, and the fear of crime do not undermine quality of life or community cohesion; and,
  - safe and accessible developments, containing clear and legible pedestrian routes, and high quality public space, which encourage the active and continual use of public areas.

IMPLEMENTATION

- The Development Management process;
- collaboration and cooperation between Government and Planning
- Authorities;
- data collection, dissemination, and monitoring; and,
- allocation and safeguarding of sites in SDPs as appropriate.

Involving People in Planning

Planning decisions shape the places where-people live and work. The system must operate in the public interest to ensure that:

- development and the use of land results in better places for people to live;
- development takes place in the places and forms that communities need; and
- the life-supporting and enhancing services provided by our ecosystem are protected and maintained.

As the outcomes affect everyone, so too should everyone have the opportunity to play a role in delivering effective and inclusive planning for their communities. Community involvement is vitally important to planning and the achievement of people-centred sustainable development.

POLICY 6: INVOLVING PEOPLE IN PLANNING

Planning Authorities should approach participation in a way that enables communities to:

- be informed about emerging policies and proposals in good time;
- put forward ideas and suggestions and participate in developing proposals and options;
- be consulted on formal proposals;
- be involved in consultation activities in locations that are widely accessible; and,
- give and receive appropriate feedback.

IMPLEMENTATION

- Preparation and adoption of Community Involvement Protocols by Planning Authorities.

Local communities should be given the opportunity to participate fully in the process of drawing up place-specific plans and policies. The THA, MCs and other public agencies, should play a key role in developing full and active community involvement in their areas.

Communities will be made up of many different interest groups relating, for example, to a particular place, or to shared issues, values or beliefs. Some of these will be well established and represented, but some groups may be less well equipped to engage with the planning system. An inclusive approach should be taken to ensure that different groups have the opportunity to participate and are not disadvantaged in the process. Identifying and understanding the needs of groups who find it difficult to engage with the planning system is critical to achieving sustainable development objectives. A clear understanding of the make-up, interests and needs of each community will be necessary to achieve this.

5.2.3 Delivering the Homes Needed

Housing demand is influenced strongly by changes in average household size. Although, according to official figures , the population grew by 4.9% between 2000 and 2011, the increase in the number of households was almost four times greater during the same period (up by 18.4%). This was largely attributable to a fall in the average size of households, from 3.64 in 2000 to 3.24 in 2011. Had there been no increase in population, the change in average household size would have required some 43,000 additional housing units between 2000 and 2011. With relatively modest population growth added in, the actual increase in the number of households was approximately 59,400.

Whilst overall population growth is forecast to be low, reducing average household sizes will continue to generate the need for more houses. SDPs therefore need to allow for further growth in household numbers and corresponding changes in the types of accommodation required. They should take account of the impacts of urban growth in seeking to provide decent housing for everyone (a key aim for sustainable development), whilst improving the efficiency of urban places and minimising harm to the environment. In this context, empty housing and buildings in reasonable condition should be brought back into active use where possible, via rehabilitation for instance.

Provision should be made in SDPs to meet the housing needs of each area for the next ten years. This requires an understanding of housing need and demand for both public and private provision. Housing need is determined by the following factors:

- existing population;
- population change rates;
- size of household or family units;
- existing housing stock (quantity, location, type and tenure);
- existing housing stock condition; and,
- minimum condition of housing stock allowable before replacement considered necessary.

SDPs should include policies which take account of changes in housing needs in their areas and which will widen the range of housing opportunities to allow these to be met. Planning Authorities should ensure that Housing Requirement Assessments are undertaken for the areas for which they are responsible. These should consider the actors outlined above, together with any other locally relevant factors. This information should inform provision for housing development within SDPs.

The Housing Development Corporation (HDC), as the body responsible for providing public housing, must be fully engaged in this process so that its investment decisions align with the spatial approach set out in the NSDS. Where appropriate, Planning Authorities responsible for adjacent areas should work together to ensure that factors and issues that cross-administrative boundaries are taken into account so that coordinated policy responses and decisions are made.

Irrespective of scale, new housing development should not be viewed in isolation. Considerations of design and layout should be informed by the wider context, having regard not just to adjacent buildings but also to the townscape and landscape of the wider locality. Policies should also be included which:

- promote designs and layouts which are safe and take account of public health, crime prevention and community safety considerations;
- create places and spaces with the needs of people in mind, which are attractive and which foster community identity;
- focus on the quality of the places and living environments being created and give priority to the needs of pedestrians rather than the movement and parking of vehicles;
- avoid inflexible and out-dated planning standards; and,
- promote energy and resource efficiency in the orientation, design and construction of new housing where possible.

Informal Settlements

The Squatter Regularisation Programme seeks to provide security of tenure and improve the living conditions of eligible squatters by either upgrading or establishing physical infrastructure to a certain minimum standard, such as roads and drainage, along with the provision of services such as potable water and electricity.

To date, the regularisation process has been slow. Whilst it is recognised that there is some exchange of information between the Land Settlement Agency (LSA) and other relevant agencies, this should be improved so that implications can be factored into SDPs and issues tackled collaboratively and more effectively. The principles and policies established by the NSDS should inform all upgrade investment decisions and decisions about relocation.

The *Land for the Landless Policy – Residential Lots Programme* does not identify a sequential preference for the type of land that will be released and without intervention may conflict with the approach to development advocated in the NSDS. It is imperative that decisions made in this context adhere to the principles for the distribution of development, particularly given the expectation for ten thousand plots to be approved within three years. Inconsistency would prove highly problematic and could significantly undermine this Strategy's objective of achieving sustainable development.

5.2.4 Valuing Cultural Heritage & Living Culture

Different regions are associated with different cultural mixes and traditions, and are renowned for particular events, festivals and celebrations. These make a positive and desirable contribution to the unique cultural identity and vitality of the nation. Cultural activities, sport and recreation can support and promote many of the NSDS's Objectives. To support participation in these activities, SDPs should create a flexible and forward looking pattern of facilities and spaces, based upon a hierarchy of demand, ranging from casual to elite, and local to national. There may be instances where an identified need in one administrative area can best be met by developing facilities in another. In such cases, cross-boundary cooperation is important.

In respect of sport and recreation, the Ministry of Sport (MoS) is developing a Master Plan for Sport Facilities which will allow for the application of logistical and methodical factors to physical and urban planning, encourage participatory stakeholder involvement, asset management and the development of a maintenance plan. Additionally, the MoS continues to develop a GIS to complement the Master Plan for Sport Facilities and aid in the decision making process for the determination of sites and the further development of sport facilities. These initiatives will be considered at the stage of NSDS re-view in collaboration with the MoS.

POLICY 7: MEETING HOUSING NEEDS

Planning Authorities should work with the HDC and private sector developers involved in housing provision to assess the housing requirements of each region as part of the on-going development and review of SDPs. Housing Requirement Assessments should consider:

- The type, tenure and general condition of existing housing;
- Households / individuals who are not living in decent housing;
- Street-dwellers;
- Squatters;
- Households living in overcrowded housing;
- Expected changes in population and household size and composition;
- People forced to share or live with others when they would rather form separate households; and,
- Accessibility needs.

When formulating SDPs and considering planning applications, Planning Authorities (working with the HDC and other public agencies as necessary) should:

- ensure that sufficient land is allocated in appropriate locations for new public and private sector housing development to meet the needs identified in the Housing Requirement Assessment
- promote and support improvement or replacement of existing sub-standard housing stock;
- facilitate conversion of unused and underused buildings in appropriate locations to provide additional housing of suitable quality; and,
- take appropriate action to maintain and, where necessary, improve the environmental and social conditions of existing areas where people live.

IMPLEMENTATION

- Data collection, dissemination, and monitoring;
- collaborative working arrangements between the HDC and Planning Authorities.
- efficient, effective and timely approval process;
- measures to increase the availability and quality of human and material resources;
- coordination with the development of a National Housing Policy; and,
- availability of an adequate pool of design professionals.

POLICY 8: PLANNING TO IMPROVE CONDITIONS FOR SQUATTERS

Appropriately located squatter sites should be upgraded to ensure that residents have access to acceptable standards of basic infrastructure.

When formulating SDPs and considering planning applications, Planning Authorities (working with the LSA and other public agencies as necessary) should allocate suitable land for the relocation of squatter sites in inappropriate locations, having regard to the need to prioritise previously developed land within the existing built up areas. Development of greenfield land should only be considered acceptable where it is demonstrated that the impacts of the development can be suitably mitigated and the objectives of sustainable development will not be compromised.

In assessing the suitability of land for release under the *Land for the Landless Policy – Residential Lots Programme*, priority should be given to making best use of infill lots within existing regularised squatter settlements. Regard should then be had to the following order of preference, with the suitability of previously developed land assessed before consideration is given to greenfield sites:

- land within the defined settlement limits of higher order settlements that have been identified in SDPs and can accommodate housing growth;
- land within the defined settlement limits of lower order settlements that have been identified in SDPs; and,
- in exceptional circumstances, land outside defined settlement limits.

IMPLEMENTATION

- collaborative working arrangements between the LSA, the Commissioner of State Lands (COSL) and Planning Authorities;
- Development Management process;
- data collection, dissemination, and monitoring
- revisions to the site development standards for squatter sites;
- adoption of appropriate and consistent policy for the management of state land; and
- Squatter Regularisation Programme review.

POLICY 9: PRIORITIES FOR CULTURE, SPORT AND RECREATION

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should plan positively for needs for open space, buildings and land that contribute to the national and local priorities for culture, sport and recreation and should ensure that adequate provision is made for new facilities where required.

Existing open space, sports and recreational buildings, pan yards and other buildings used or last used for culture, sport and recreation purposes should not be developed/redeveloped for other purposes unless:

- it can be demonstrated that the open space, building or land is surplus to requirements;
- the lost facilities would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; and,
- the development is for alternative provision, the needs of which clearly outweigh the loss.

IMPLEMENTATION

- completion of the National Inventories Project (Ministry of the Arts and Multiculturalism);
- adoption and implementation of the National Cultural Policy (Draft);
- collaborative working arrangements between Planning Authorities and the MoS, the Ministry of Education (MoE) and the Sport Company of Trinidad and Tobago (SPORTT); and,
- data collection, dissemination, and monitoring (including the completion of an up–to-date register of public and private sporting facilities com piled by the MoS).

Built Heritage

Trinidad and Tobago has a rich and diverse historic built environment, which has been created by people of different cultural backgrounds interacting with their surroundings and each other over many centuries. It contributes to the cultural and national identity and sense of place, but has long been undervalued and under threat.

Historic buildings such as the "Magnificent Seven" in Port of Spain, streets and other settings contribute to the character and identity of local places. They represent and express part of the national identity and are valuable for their role in culture, religion, education, leisure and tourism. The same applies to archaeological remains such as Banwari Trace in southwest Trinidad , which can contain irreplaceable information about the past and the potential for an increase in future knowledge. The historic environment should therefore be understood, conserved and enhanced in recognition of its contribution to supporting the nation's quality of life.

The historic environment can make a significant contribution to economic development and regeneration through tourism. It is therefore important that change does not destroy invaluable historic assets. Understanding, careful management and the involvement of local communities should inform any change that takes place. Assessment of the value that built heritage adds to the national and local economies may help to inform positive policies and action programmes.

The National Trust was established by an act of Parliament in 1991 to ensure the legal protection and preservation of the country's historical buildings and heritage sites. However to date, no historical buildings or sites have been listed for protection, there is no restoration and maintenance policy and a number of buildings and sites have fallen into disrepair and dereliction. There is accordingly a need for the National Trust to be reformed and supplemented with the proper administrative and institutional infrastructure required to perform its role effectively.

POLICY 10: PLANNING POSITIVELY FOR THE HISTORIC ENVIRONMENT

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should:

- identify and assess the significance of specific historic assets;
- encourage the refurbishment and re-use of disused or under-used buildings of some historic or architectural merit and, where appropriate, plan for them to be incorporated sensitively into regeneration schemes;
- recognise opportunities for enhancing existing tourism attractions and for developing the potential of other areas and sites of historic interest such as the Compte de Lopinot complex ; and,
- promote the conservation of historic assets that are valued by the local or national community and plan for changes to the historic environment to be undertaken with due sensitivity.

Where appropriate, Planning Authorities should consider designation of areas of particular historic or architectural interest as protected areas within their SDPs and in such cases they should include policies for positive conservation within those plans.

IMPLEMENTATION

- completion of the National Inventories Project ;
- adoption and implementation of the National Cultural Policy (Draft);
- reform of the National Trust with proper administrative and institutional infrastructure put in place; and,
- establishment of a system of Protected Areas in collaboration with the National Trust and other relevant stakeholders to support the preservation for future generations, of any historic, rare, unique, internationally important, outstanding or indigenous monument, fossil, place or site of national, historic or archaeological interest (as set out in the Protected Areas Policy, 2011).

Due consideration should be given to cultural diversity and variation when planning for the form and design of places and buildings and this should be reflected in SDPs as appropriate.

5.3 Sustainable Prosperity

5.3.1 Building a Competitive, Innovation Driven Economy

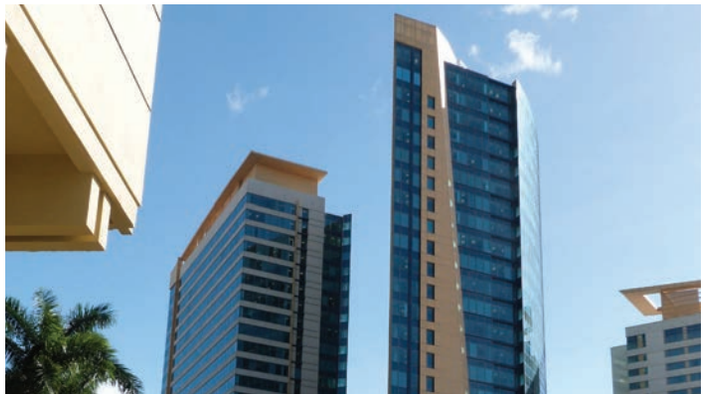
Globally, what were thought of as established markets and sectors have become increasingly volatile and unpredictable, and traditional models of growth and development are no longer delivering in the way that they once did. Conventional approaches to market-led models of growth are being challenged around the world. This lends weight to calls to reconsider and rethink, and to develop an approach that will deliver the objective of growth in ways that are more sustainable.

Nationally, economic prosperity continues to be driven by the energy sector. Whilst these resources are valuable, over-reliance on any one sector can make for economic vulnerability. It is in this context that there has long been a drive for diversification in national economic strategies. The need to reconsider the existing approach to growth and prosperity is acknowledged in current national policy .

The Government is committed to securing economic prosperity. Policy 11B captures the Growth Pole strategy which seeks to build on the inherent strengths of the selected areas in order to harness the potential for growth and investment in the priority sectors: financial services, tourism, ICT, downstream energy industries, agriculture, creative arts and maritime activities. It is essential that the sustainable growth of these sectors be supported through the spatial planning system in ways that provide the private sector with opportunities for investment and space for expansion in line with the approach to Harmonised Regional Development. This includes education institutions, which are a prerequisite for a skilled and employable labour force.

In addition to ensuring that the needs of the growth strategy can be met, Policy 11A seeks to retain and safeguard premises and land that currently contribute to the sustainability of local communities. This is particularly important in rural areas where choices for business accommodation are more limited than in urban areas. For a business to grow, it may need to move elsewhere, which impacts on the sustainability of the local community, as employment opportunities are lost and commuting increases. Support should be given to development and initiatives that will provide for more - and a broader range of - businesses and employment opportunities to help reduce regional disparities in household income, such as in the knowledge-intensive industries. This can in turn help reduce out-migration of younger people, retain skills and contribute to the overall sustainability of local communities.

The ability to work from home can be an incentive for people to set up their own businesses. Broadband infrastructure is currently an issue in some areas, and planned investment in its improvement will enable more employees to work from home. Home-based working and other flexible working practices such as live-work units are supported in principle by the NSDS.



POLICY 11A: LEAVING NO ONE BEHIND

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should:

- promote a low-carbon economy, including investment in green technologies and jobs;
- provide an adequate supply of land in appropriate locations and suitable for the needs of modern, economically viable business
- support priority economic sectors and clusters which will contribute to the diversification into high-skill and knowledge-based industries;
- recognise the importance of the rural economy to the sustainability of rural communities and the country as a whole;
- support the growth and development of education and training facilities in appropriate locations;
- promote the distinctive qualities of Trinidad and Tobago to attract and retain inward investment, and ensure that these qualities are not jeopardised by inappropriate development;
- safeguard existing business premises for business use where it is of an appropriate type and location; and,
- support new ways of working, having regard to balancing economic, social and environmental needs.

POLICY 11B: AREA-BASED ECONOMIC PRIORITIES

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should support the following priorities:

1. a Couva, Chaguanas, Carapichaima and Charlieville Growth Pole: focusing on light industrial development, service industries, software development and creative industries;
2. a North Coast Growth Pole: focusing on development including hotels, fishing, marina, agriculture and services;
3. a South Western Peninsula Growth Pole: focusing on port development, energy services, strengthening the fishing industry, manufacturing and support services and rehabilitation and development of tree crops and other forms of agriculture;
4. an East Port of Spain Growth Pole: focusing on construction, creative industries, music and entertainment, tourism related industries including craft, and micro and small business development;
5. a North East Tobago Growth Pole: focussing on the development of the diving industry, community events, agriculture and horticulture;
6. strategic development projects at Cove Eco-Industrial and Business Park in Tobago, Tamana InTech Park, Invaders Bay, Chaguaramas and Port of Spain City Centre.

Planning Authorities should monitor and review the take-up of new employment land and the area priorities as appropriate.

IMPLEMENTATION

- Development management processes;
- allocation and safeguarding of sites in SDPs as appropriate; and,
- delivery of schemes identified within the MTPF.

5.3.2 Achieving Food Security

As global food prices continue to increase, a productive agriculture and fisheries sector is required to reduce the reliance on imported goods and better meet the food needs of the population.

As such, "the Government's overall goal for the agricultural sector is to create a food secure nation".[10] The development of a highly productive sector is a key objective of this goal and the Ministry of Food Production (MFP) has various initiatives already in place geared towards increasing agricultural outputs.[11]

One such initiative is the Commercial Large Farms Programme (widely referred to as 'mega farms') in which the State partners with the private sector to establish Large Commercial Agricultural Farms on State lands in Trinidad. The first two farms commenced production in 2008; Tucker Valley Chaguaramas and PCS Nitrogen Model farm at Exchange, Couva. Another joint venture at Edinburgh commenced production in 2011.[12] When fully operational, the programme will feature fifteen such farms at various locations throughout Trinidad . In addition to the large farm initiatives, higher levels of support and assistance must be given to small farmers particularly in respect of tenure security, rural access roads, produce marketing and extension services. The basis of initiatives for Tobago set out in CEDP 2.0 focus on restructuring and improving agricultural planning and programming to promote a revived agriculture, fisheries and food industry that contributes to Tobago's food security and links to the hotel industry.[13]Tobago has significant potential to contribute to the national goal of food security.

The goal of national food security and the spatial requirements needed to secure a productive, competitive and environmentally sustainable sector which can adapt to new and changing markets must be appropriately reflected in SDPs and considered when decisions on land use planning applications are taken. Planning Authorities and other relevant public bodies should support development proposals that will:

- contribute to the achievement of the five mandates set out in The National Food Production Action Plan 2012 – 2015 (Appendix 1, section 4.1);
- enable farming and farmers to become more competitive, sustainable and environmentally friendly; and,
- facilitate adaptation within the sector to new and changing markets.

Given the significant loss of agricultural land experienced over recent years it is considered necessary to protect against further loss of all agricultural land, regardless of its capability class. To this end, consideration should be given to setting up of an agricultural land bank.

Key areas where new agricultural demonstration projects could be launched should be identified in SDPs. Recognition should also be given to the contribution that can be made by urban agriculture.

Fisheries are another important component of the agricultural sector and the MFP launched an extensive programme in mid-2012 to refurbish, rebuild and upgrade fish landing facilities across Trinidad.[14]

The on-land requirements of those involved in fishing and fish/seafood marketing and processing should be provided for in SDPs particularly in appropriate coastal areas. Such plans should make positive provision providing this will not conflict with policies and strategies for the conservation of marine, coastal and wetland habitats. Impacts of development proposals on the marine environment and marine ecosystems must be carefully considered from a well-informed standpoint.

POLICY 12: PLANNING FOR AGRICULTURE AND FISHERIES

When formulating SDPs, Planning Authorities (working with other public agencies as necessary) should:

- identify all land currently in agricultural use and land with significant productive potential and include policies to both protect such land from non-agricultural development and retain it in productive agricultural use;
- identify significant maritime development and conservation areas where fish stocks and associated maritime activity will be protected and enhanced, to ensure that these are not harmed by inappropriate development;
- take into account the synergy between food producers and local communities and the important role that markets play in the supporting the vitality and viability of many town centres, and they should plan positively to support this;
- promote and encourage opportunities for urban agricultural practices to take place in appropriate locations; and,
- make appropriate provision for buildings, infrastructure and facilities necessary to support agriculture and fisheries.

Land in agricultural land capability classes III to V should only be released for development in exceptional circumstances and where it can be demonstrated that the alternative development would bring about greater sustainability benefits than would be achieved if the land remained in its existing use.

No land of agricultural land capability class II or I should be released for development.

IMPLEMENTATION

- adoption of National Water Resource Management Strategy;
- review of the Agriculture Land Capability Classification;
- improvement of land management and tenure for farmers;
- promotion programmes for locally produced food;
- Development Management processes;
- initiation of an agriculture labour programme; and,
- skills and training in various fishery related activities provided by the Seafood Industry Development Company (SIDC).

Synergies between agriculture and fisheries and tourism should be strengthened wherever possible, with demand generated by leisure and business visitors being used to strengthen the market for high quality local produce.

The role of markets as key facilities and focal points for local communities should be recognised and supported. Their importance in providing links between producers and local communities should be reflected in SDPs and decisions, especially in respect of their impact on the vitality and viability of urban centres.

[10] The National Food Production Action Plan 2012 – 2015, Ministry of Food Production Land and Marine Affairs, page 5.
[11] Innovation and Lasting Prosperity, Medium-Term Policy Framework 2011 – 2014, Ministry of Planning and the Economy, October 2011, page 39.
[12] http://agriculture.gov.tt/fplma/?q=programmes-projects
[13] The Comprehensive Economic Development Plan, 2013-2017, CEDP 2.0: Redoubling the Effort, Volume 1, THA, October 2012
[14] http://www.trinidadexpress.com/news/_50m_to_be_spent_on_fishing_facilities-151982095.html

Land resource management

Land management has historically been underpinned by land capability assessments. Existing classifications of land capability were based on an assessment of the agricultural potential of soils in the country undertaken at a time when the agricultural and technological context both nationally and internationally was different. Given that land use decisions continue to be based on the existing classifications and the extent of land use conflicts and competition occurs, a review of national land capability is recommended.

The review should take account of not just soil potential but current land use trends and technological developments in the agricultural, food production and processing industries. Once this has been undertaken, Policy 12 should be reviewed and enhanced as appropriate.

5.3.3 Maintaining Ecosystems

The nation's rich and distinctive natural environment has economic, social and ecological value and the growth and development that is needed over the next twenty years must be planned and delivered to ensure that the quality and diversity of these resources are protected and, where possible, enhanced. Natural resources including water, soils, and air also need to be protected and managed as part of sustainable development.

A positive and proactive approach should be taken to the environment, with the emphasis on achieving quality places that are attractive and sustainable, and which contribute positively to the quality of life. Components of the environment are intrinsically linked with each other (and with other social and economic objectives), and their integration in planning and environmental management should be promoted where appropriate. This will ensure that environmental resources are considered in their wider context rather than as isolated natural sites.

Living within environmental limits is often cited as a guiding principle for sustainable development. The protection and enhancement of the environment is vital to achieving sustainable development and ensuring a better quality of life. Its sustained ability to provide essential ecosystem services is ultimately essential to social and economic well-being. In recognition that there is finite environmental capacity to accommodate increased development before irreversible damage results in serious degradation, Policy 13 establishes four key principles that should be adopted by all Planning Authorities.

POLICY 13: SUSTAINABLE USE OF NATURAL RESOURCES

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should adhere to the following principles:

- internationally and nationally designated natural assets should receive the highest level of protection in accordance with the provisions of the National Environmental Policy (NEP) 2006;
- damage to natural assets should normally be avoided;
- where damage to a natural asset is unavoidable, impacts should be mitigated and compensated for, preferably in a relevant local context; and
- opportunities to safeguard and enhance biodiversity-sustaining habitats in and around developments should be promoted.

Planning Authorities should seek to protect sensitive coastal and inland environments, habitats and ecosystems, from significant damage, working with the Environmental Management Authority (EMA) to ensure that Environmental Impact Assessments (EIAs)[15] are carried out in connection with development proposals where appropriate, and ensuring that any required mitigation measures are carried through.

Planning Authorities should work with the EMA to ensure that there is a consistent and proactive approach to safeguarding the natural environment, whilst ensuring that associated procedures are coordinated without unnecessary duplication of effort.

IMPLEMENTATION

- The Development management processes;
- partnership working between Planning Authorities and the EMA; and
- data collection, dissemination, monitoring and updating.

[15] EIAs should be undertaken in accordance with the requirements of the Environmental Management Act 2000 and the Certificate of Environmental Clearance Rules 2001 for development activities that trigger the requirement for a Certificate of Environmental Clearance (CEC) as set out in the Certificate of Environmental Clearance (Designated Activities) Order, 2001 and subsequent amendments to the Order.

Priorities for Management and Enhancement of Landscape

Landscape character is what makes an area unique. It is a distinct, recognisable and consistent pattern of elements in the landscape that makes one place different from another. Landscapes are not static: their constant evolution is a result of changing natural processes, as well as the changing needs of society. The wide variety of landscapes reflects the varied geology, ecology and history of Trinidad and Tobago and has substantial social and economic value.

Development pressures over recent decades have, however, transformed many parts of the natural landscape to the extent that some of the impacts are irreversible. It is in this context that five Landscape Management Zones are identified on the Key Diagram; for Chaguaramas, Trinidad's Northern, Central and Southern Ranges and Tobago's Main Ridge. Whilst there are areas within these Zones that are covered by the National Protected Areas Policy (2011) in recognition of their biodiversity, the integrity of the wider landscape has not previously been afforded special protection.

These prominent and valued landscapes interact visually with communities both within and beyond the Zones. In both the preparation and review of SDPs and the decision making process, Planning Authorities should devise appropriate frameworks for ensuring that landscape quality is safeguarded (Information Box 10).

POLICY 14: LANDSCAPE MANAGEMENT

When formulating SDPs, Planning Authorities (working with other public agencies as necessary) should establish criteria-based policies to ensure that any appropriate development proposals in and adjacent to the Landscape Management Zones respect their intrinsic landscape character.

When considering planning applications, Planning Authorities should ensure that the intrinsic landscape character of any effected Landscape Management Zone is protected from inapproprite development.

IMPLEMENTATION

- Development Management process, including the engagment with Design Review Panels; and,
- preparation of Landscape Character Assessments.

INFORMATION BOX 10
Landscape Character Assessment

Landscape Character Assessment is an approach to understanding the differences between landscapes and can serve as a framework for decision-making. It is a way of:

- identifying the various elements that contribute to the landscape;
- understanding how these contribute to a sense of place; and
- using this understanding to plan and manage landscape change.

Integrated Water Management

Whilst Trinidad and Tobago is reasonably well endowed with water resources, a number of water related challenges resulting from issues such as increased industrial activity, climate change and variability, and changing demand for water must be addressed. These issues are intrinsically linked to land use planning and it follows that applications for the development and use of land should give due consideration to water management concerns. This should include the mitigation of potential negative impacts on water catchment areas, the supply of adequate water and sewerage services, the protection of surface and groundwater resources/ aquifers, and more generally, the linkages between land use and efficiency in the use of water resources.

Planning Authorities should work with the Water Resources Management Unit of the Ministry of the Environment and Water Resources (MEWR), and other partners to ensure a coordinated approach to planning for water supply, wastewater treatment and water quality issues.

POLICY 15: A COORDINATED APPROACH TO WATER RESOURCES AND WATER QUALITY

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies as necessary) should ensure that:

- water-related issues are taken into account at an early stage in the process of allocating land for development and in the phasing and implementation of development;
- timely provision is made for appropriate additional infrastructure for water supply and wastewater treatment to cater for the levels of development provided for in SDPs;
- high standards of water efficiency and conservation are achieved in new developments;
- unsustainable abstraction from surface, ground, or coastal sources is avoided;
- the pollution of water sources (including groundwater sources) is avoided and water quality is protected/ improved;
- provision is made for development of new water resources where this represents the most sustainable solution to meeting identified water resource requirements, taking account of predictions of future climate change;
- sustainable drainage techniques are applied wherever practical to help mitigate/diffuse pollution and support groundwater recharge;
- sewage treatment capacity is sufficient to meet the needs of development and that, where necessary, improvements are in place so that development does not compromise the quality of discharged effluent; and,
- appropriate private investment into wastewater systems is secured.

IMPLEMENTATION

- Development Management processes;
- updating existing legislation, including the Water and Sewerage Act 1980, the Water Resources Management Strategy 2000, the Water Pollution Rules 2001 (amended 2006) and the National Integrated Water Resources Management Policy 2005;
- preparation of an Integrated Coastal Zone Management Policy in line with the provisions of the National Integrated Water Resources Management Policy 2005;
- preparation of a National Irrigation Plan in line with the provisions of the National Integrated Water Resources Management Policy 2005;
- enforcement of the Environmental Management Act 2000; and,
- educational instruments.

Managing Coastal and Marine Resources

The coastal zone is a geographical area with distinct characteristics due to the interaction of sea, land and associated atmospheric conditions (Information Box 11).

The limited coastal space and resources of the coastal zone are subject to competing development demands which negatively impact on the integrity of the respective ecosystems, affecting their ability to deliver essential goods and services. Global climate change and climate variability add to the continuous pressure on these coastal environments especially in SIDS.

There has been a number of well publicised land use conflicts in coastal areas in recent times, including the impact of the proposed port on existing mangroves in Claxton Bay . Other particular issues for the coastal zone include coastal erosion at Columbus Bay and elsewhere on the south-west peninsula, south east coast around Guayaguayare and south western Tobago from Pigeon Point to Coco Reef. Land reclamation is also an area requiring greater management, particularly the incidence of illegal coastal reclamation around Port of Spain and along the North West Peninsula .

The fragility of the coastal zones and the importance of their protection is recognised in the National Integrated Water Resources Management Policy 2005 (IWMR) which confirms that an Integrated Coastal Zone Management Programme will be pursued to take into consideration the combined effects of all activities within and impacting upon coastal areas, with the objective of facilitating an integrated approach to coastal zone management aimed at enhancing the environmental quality of coastal resources while enabling sustainable economic development through rational decision-making and planning.

This Programme was initiated by the appointment of an Integrated Coastal Zone Management (ICZM) Committee in April 2012. The Committee will address issues of sustainability, review coastal policy and legislation and engage discussion among the public and other stakeholders.

The Programme includes the development of a National Coastal Zone Management Policy. This is intended to designate uses for various coastal areas and establish restrictions on other requirements. It will be necessary for the Coastal Zone Management Policy and the NSDS to align so as to ensure that the dynamic nature of the coast is reconciled with its potential to deliver economic growth. The uses and activities that frequently require a coastal location include:

- tourism;
- recreation;
- developments that depend on access to the sea such as ports, marine services facilities and marinas;
- energy generation; and,
- waste water and sewage treatment and disposal.

Planning in the coastal zone requires a good understanding of natural processes and Planning Authorities should recognise that on-shore development in SIDS can often have an impact offshore. As such, when considering the environmental impacts of developments seemingly outside the coastal area, their effects on the coastal zone will require consideration.

Given the scale over which the natural processes around the coast operate, a high level of coordination among relevant Government and other agencies is fundamental. Planning allocations and policies for adjacent administrative areas of coast should be consistent, as there is scope for potential conflicts. For example, development may alter the natural processes of erosion and deposition, which can damage habitats, fisheries or recreational and economic resources.

INFORMATION BOX 11

Coastal Zone

The coastal zone consists of a range of habitat types including: open sea, coral reefs, sea grass beds, tidal flats, mangroves swamps, brackish water marshes, estuaries, sandy beaches/ shores, rocky beaches/shores, and littoral (seaside) forests. It is comprised of three main components:

1. Coastal waters, which extend from the low water mark into the sea, up to the point where these waters are no longer significantly influenced by land based activities;
2. The coastline or sea shore, which is the area between the low and high water marks; and,
3. Coastal lands, which are inland areas above the high water mark that influence the quality or composition of coastal waters or are the inland areas that are influenced in some way by their proximity to coastal waters.

POLICY 16: COASTAL AND MARINE RESOURCE CONSIDERATIONS

When formulating SDPs for areas that border or impact on coastal and marine resources, Planning Authorities (working with other public agencies as necessary) should:

- ensure that decisions are informed by up-to-date information on the natural quality, physical processes and development impacts of the coastal zone;
- include policies that conserve the environmental quality and productivity of coastal ecosystems;
- define those parts of the coast where opportunities exist for development or for increased levels of recreation and other coast-related activities;
- define those parts of the coast where physical constraints and risks either make development inappropriate or require mitigating interventions to make development acceptable, taking full account of the expected impacts of climate change;
- define those parts of the coast which need enhancement or regeneration, particularly areas damaged by past development; and,
- ensure that there is consistency with SDPs for adjacent coastlines.

IMPLEMENTATION

- preparation of an Integrated Coastal Zone Management Policy in line with the provisions of the National Integrated Water Resources Management Policy 2005;
- collaboration and coordination between Planning Authorities, the Integrated Coastal Zone Management Committee and the Institute of Marine Affairs;
- enforcement of Environmental Management Act 2000; and,
- educational instruments.

Air Quality

Air pollution is a major environmental risk to health and is an increasingly widespread issue for the nation. Urban areas, especially those along major transport routes, are particularly at risk, as seen by the attempt to construct a landscaped bund between Beetham Gardens and the Beetham Highway in the interests of reducing air pollution in the community. Within residential areas, the siting of poultry and pig farms frequently gives rise to air quality issues, as seen in late 2012 when a Certificate of Environmental Clearance (CEC) was withdrawn from a poultry farm in Piparo on account of complaints by neighbours over the stench emanating from the operations. The location of industrial processes in relation to residential development is another frequent conflict for example the cement plant at Claxton Bay. In some instances, the polluting enterprise may have been in place prior to the introduction of residential development. In such cases, the polluting enterprise must be set higher environmental standards than heretofore to be allowed to operate.

In these and other instances, the planning system plays a key role in:

- ensuring that other uses and developments are not, as far as possible, affected by major existing or potential sources of pollution;
- determining the location of development which may give rise to pollution, either directly or indirectly;
- ensuring that the relative locations of different uses and activities, and the transport infrastructure providing access between them, are planned with a view to minimising transport-related emissions that lead to poor air quality; and,
- ensuring that the need to minimise air-polluting emissions is taken into account in the design, construction and operation of new developments.

Poor air quality can contribute to a number of health problems (Information Box 12) and can also affect human behaviour. For example, recent studies have shown a strong correlation between reducing levels of lead in the environment - from fuel, paint and other sources - and declining violent crime rates in urban areas of the USA.[16]

[16] *"The urban rise and fall of air lead (Pb) and the latent surge and retreat of societal violence": research paper by Howard W. Mielke and Sammy Zahranc published in August 2012 in Environment International by Elsevier Ltd.*

INFORMATION BOX 12

Air Quality: Key Facts from the World Health Organisation (WHO)

- Air pollution is a major environmental risk to health. Reducing air pollution levels can help reduce the global burden of disease from respiratory infections, heart disease, and lung cancer.
- The lower the levels of air pollution in a city, the better the respiratory (both long- and short-term), and cardiovascular health of the population.
- Indoor air pollution is estimated to cause approximately two million premature deaths, mostly in developing countries, almost half of which are due to pneumonia in children under five years of age.
- Urban outdoor air pollution is estimated to cause 1.3 million deaths worldwide per year.
- Exposure to air pollutants is largely beyond the control of individuals and requires action by public authorities at the national, regional and even international levels

The WHO Air quality guidelines represent the most widely agreed and up-to-date assessment of health effects of air pollution, recommending targets for air quality at which the health risks are significantly reduced. The Guidelines indicate that by reducing particulate matter (PM10) pollution from 70 to 20 micrograms per cubic metre, air quality related deaths can be reduced by around 15% (WHO, 2011).

Source: WHO Air Quality and Health Fact sheet N°313 Updated September 2011

Air quality can therefore impact on both individuals' quality of life and on the well-being of communities. This can bring significant economic costs as well as social and personal ones. These include productivity impacts associated with lost working hours and healthcare costs.

Existing and future air quality should be considered in the preparation of SDPs and should also be considered in determining planning applications where significant air pollution considerations arise.

POLICY 17: AIR QUALITY

When formulating SDPs and considering planning applications, Planning Authorities (working with the EMA and other public agencies as necessary) should:

- identify areas where poor air quality occurs and the main sources of air-borne pollutants in each of those areas, having regard to potential contributions from traffic, industry, commercial and domestic sources, agriculture and other activities;
- adopt an integrated approach to air quality management so as to reduce pollution affecting identified areas of poor air quality by:
  a) using appropriate powers and measures to reduce or eliminate pollution from existing sources;
  b) considering the potential effects of proposed new developments and changes, including impacts of any increased traffic levels and altered traffic patterns, when preparing SDPs and considering applications for planning permission.
- have regard to opportunities to minimise the emission of air-borne pollutants through the design, construction and use of places and buildings.

IMPLEMENTATION

- adoption of Draft Air Pollution Rules 2009; and,
- data collection, dissemination, and monitoring.
- The Development Management Process

Geo-resources

The term “geo-resources” encompasses all resources occurring naturally in the ground, including minerals and energy raw materials. These are resources upon which modern society is heavily based, which are used extensively, and which require intervention in natural systems.

Mineral resources

Minerals are essential to support sustainable economic growth and quality of life. It is important that there is a sufficient supply of material to provide for necessary infrastructure, buildings, energy and goods. Such resources are, however, finite and can only be worked where they are found. It is important, therefore, to make best use of them so as to secure their long-term conservation.

Whilst necessary, extraction activities often conflict both with adjacent land uses and can cause damage to habitats and biodiversity, whilst visually scarring the landscape. Proposals for new quarry sites will be subject to Environmental Impact Assessment and operating regulations must be enforced to ensure that adverse impacts on the environment or public health and amenity are avoided.

Proposals to undertake quarrying activities at new sites must include a commitment to landscape restoration once operations have ceased. Beneficial new uses such as agriculture, forestry, wildlife habitats, recreation or even landfill should be considered. Efforts should also be made to promote and support appropriate restoration schemes at current and abandoned sites, including areas such as Valencia where there is a proliferation of abandoned sites.

Many of these issues are currently being considered by the Ministry of Energy and Energy Affairs (MEEA) as they seek to establish mining zones that identify the supply of aggregate needed in the nation for the next twenty years. Mining operations may occur only within mining zones and in collaboration with Planning Authorities and the EMA, the MEEA must set out the Parameters, Thresholds and Requirements (PTRs) that must be applied to any prospective and current quarry operation.

Finally, quarrying/ mining operations are considered a transient use of land, therefore strategic masterplans have to be formulated for each mining zone that considers holistically the future use that land should be returned to after extraction takes place. This information should be incorporated into SDPs.

POLICY 18: SUSTAINABLE MINERAL USE

When formulating SDPs, Planning Authorities (working with the MEEA, EMA and other public agencies as necessary) should:

- based on up to date assessments of the need for given resources, identify lands suitable for mineral extraction and seek to ensure an adequate supply of mineral resources;
- safeguard lands that contain workable and economically viable mineral resources and are not in sensitive environmental areas from other forms of development, in the interests of preventing sterilisation of mineral resources and encourage prior extraction of such resources;
- develop criteria to be applied to assess proposals where there are potential land use conflicts, with particular attention given to the need for, establishment and treatment of buffer zones;
- as far as practicable, explore the potential contribution that substitute or secondary and recycled materials and minerals waste could make to the supply of materials, before considering extraction;
- set out criteria against which planning applications will be assessed to ensure that permitted extraction operations do not have unacceptable adverse impacts on the environment and human health;
- develop policies for restoration and aftercare and after-use of sites to either its former condition or to a number of beneficial new uses such as agriculture, forestry, wildlife habitats, recreation or even landfill, to be implemented as soon as possible after cessation of extraction operations; and,
- undertake Environmental Impact Assessments in accordance with the requirements of the Environmental Management Act 2000 and the Certificate of Environmental Clearance Rules 2001 for development activities that trigger the requirement for a Certificate of Environmental Clearance as set out in the Certificate of Environmental Clearance (Designated Activities) Order, 2001 and subsequent amendments to the Order.

IMPLEMENTATION

- Implementation and review of the Minerals Act 2000;
- The establishment of cross-agency arrangements for the development of national guidelines for sustainable mineral use, including undertaking assessments of needs for resources;
- Development of enhanced environmental guidelines and greater coordination between relevant agencies;
- Data collection, dissemination, and monitoring;
- Post identification of mining zones, the formulation of strategic masterplans for each zone;
- Institutional capacity building to facilitate increased rigour and enhanced management of the sector, particularly as regards development and environmental approvals and monitoring and enforcement.
- Development Management and plan making processes.

Energy resources

Petroleum has been extracted on a commercial basis for over one hundred years and energy resources have long been the mainstay of economic growth, consistently sustaining economic and infrastructure development. Although a need for national economic diversification is generally acknowledged and accepted, the hydrocarbon sector, including the economically important natural gas industry, is likely to remain the mainstay of the economy for the foreseeable future.

Having developed its experience over such a long time, combining terrestrial and marine extraction and working through many economic cycles, the energy sector is well-placed to provide advanced technology services to local, regional and global markets. There have been significant contributions to technological advances in the oil and gas industry and this has been supported by high-quality research and development. This has provided the nation with a valuable and internationally-respected knowledge base that should be capable of becoming a distinguished centre of excellence. This and other forms of diversification present an opportunity to increase the efficiency of the wealth generated in the sector, including promoting downstream investment and strengthening links with the rest of the economy.

Although oil and gas deposits are extracted both at sea and on land, the processing facilities and energy-related industries (including ammonia, methanol and aluminium) are concentrated in the coastal zone, particularly along the west and south-west coastline of Trinidad, because of the availability of flat land and proximity to port facilities . Most of these are located in the major industrial estates, a number of which are located on the coastline within urbanised areas and in areas that drain into coastal waters.

Diversifying by further developing, refining and marketing the energy knowledge that has been accumulated, has implications for the future form and functioning of both the coastal urban areas (particularly along the west and south-west coastline of Trinidad) and potential centres of excellence inland, such as Tamana InTech Park and Cove Eco-Industrial Business Park.

The impacts on the coastal zone and fisheries are a source of particular concern given the sensitivity of these environments and their susceptibility to contamination and damage from effluents and solid waste discharges. Planning for this sector is, therefore, a key matter for consideration within the context of the broader framework for integrated coastal zone planning. Impacts of extraction activities inland, especially in proximity to sensitive forest and wetland resources, also require careful planning and operational regulation.

POLICY 19: SUSTAINABLE ENERGY EXTRACTION

When formulating SDPs, Planning Authorities (working with other public agencies as necessary) should:

- based on up-to-date assessments of the need for additional energy related industrial land, undertake reviews of the capacity at existing industrial estates to determine the capacity for infill and expansion;
- develop criteria to be applied to assess proposals where there are potential land use conflicts, with particular attention given to the need for, establishment and treatment of buffer zones;
- set out criteria against which planning applications will be assessed to ensure that expanded/new operations do not have unacceptable adverse impacts on the environment and human health;
- have full regard to requirements relating to integrated coastal zone planning in the emerging Integrated Coastal Zone Management Policy;
- seek to protect sensitive coastal and inland environments, habitats and ecosystems, from significant damage, requiring Environmental Impact Assessments to be carried out in accordance with the requirements of the Environmental Management Act 2000 and the Certificate of Environmental Clearance Rules 2001 for development activities that trigger the requirement for a Certificate of Environmental Clearance as set out in the Certificate of Environmental Clearance (Designated Activities) Order, 2001 and subsequent amendments to it, and ensuring that any required mitigation measures are implemented.

IMPLEMENTATION

- The establishment of cross-agency arrangements, which include public agencies such as the National Energy Corporation of Trinidad and Tobago (NEC) and the Evolving TecKnologies and Enterprise Development Company Limited (eTeck), in undertaking assessment of needs for energy related industrial land;
- preparation of an Integrated Coastal Zone Management Policy;
- Development of enhanced environmental guidelines and greater coordination between relevant agencies;
- data collection, dissemination, and monitoring;
- Development Management and plan making processes; and,
- institutional capacity building to facilitate increased rigour and enhanced management of the sector, particularly as regards development and environmental approvals and monitoring and enforcement.

5.3.4 Meeting the Challenges of Climate Change

"The issue of climate change and global warming was identified as a common problem since 1979. It is the main global environmental concern amongst all the environmental issues."[16]

As a SIDS, Trinidad and Tobago is particularly vulnerable to the consequences of climate change such as sea level rise, increased flooding, hillside and coastal erosion, and increased frequency and intensity of hurricanes. Having signed and ratified the Kyoto Protocol[17] , the Government is committed to a strategy of mitigating climate change impacts and taking the steps to adapt to them. To this end, a National Climate Change Policy (2010) has been adopted, the implementation of which will increase the use of new and innovative technologies that can lower the levels of emission, encourage the use of clean energy technology and renewable energy sources and promote the adoption of more energy efficient practices.[18]

In support of this strategy, the policies of the NSDS, both individually and in combination, seek to contribute through measures such as improving efficiencies in converting energy to wealth; reducing economic and functional dependence on the consumption of finite reserves of fossil fuels; and effecting other changes leading to lower emissions of carbon into the atmosphere. These policies include:

- Policy 3, which requires that the design of development minimises carbon emissions relating to the use of energy and other resources, and encourages low-carbon lifestyles by the occupants and users of the development;
- Policies 3 and 4, which promote an overall pattern of settlement and growth that reduces the need to travel;
- Policy 11A, which supports investment and job-creation in low carbon industries, services and products;
- Policy 12, which supports local food production in both rural and urban communities;
- Policy 21, which promotes modal shift from the car to less carbon-intensive modes of transport through appropriate investment, infrastructure provision and the design of development;
- Policy 22, which promotes development and application of ICTs, thereby helping to reduce travel demand and emissions; and,
- Policy 23, which promotes a reduction in energy use in line with an energy hierarchy and promotes the use and development of low carbon and renewable energies.

Climate change, through the projected increase in mean global temperatures, is expected to result in decreased mean annual rainfall[19]. The impacts of climate change are likely to affect a number of sectors, including agriculture, human health, settlements, coastal zones and water resources. Therefore, the implications of those changes need to be carefully considered, with climate change responsive measures accordingly built in to an integrated spatial planning approach to hazard risk management.

Responding to Hazard Risks

According to the United Nations publication "A Guide for Implementing the Framework for Action 2005-2015: Building the resilience of nations and communities to disasters":

"Introducing natural hazard considerations into development, land-use and urban planning will, in the long term, reduce the accumulation of risk in both rural areas and areas of rapid urbanization. Urban disaster risk is largely a result of unsatisfactory urban land-use management and development, poor construction practices, the increasing complexity of modern societies and inappropriate land-use decisions in the past.

[16] *Working for Sustainable Development in Trinidad and Tobago, Progress, Gaps and Opportunities for Action*, Ministry of Planning and the Economy, June 2012, page 50
[17] The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets
[18] Ibid footnote 30
[19] Ibid footnote 30, page 51

If risk parameters are considered in development plans, as well as in urban and regional land-use plans, then appropriate measures can be introduced to address the risks. This is especially important for mega-cities and other dense concentrations of population, and for the poor and marginalized groups. In addition to ensuring better use of land, the introduction of sound practices in land-use planning and construction practices will help improve standards of professional practice and ethics.

Such planning fortifies the goal of urban sustainability by respecting the interdependence of the urban and natural ecosystems.

Land-use planning supports disaster risk reduction because it focuses on modifying the vulnerabilities of [urban areas] instead of controlling the hazards, thereby supporting disaster mitigation and prevention. The logic of land-use planning is compatible with disaster risk reduction because both are systematic, future-oriented, decision-oriented and proactive".

Adaptation to climate change and its potential impacts should be embedded in spatial planning policies and decisions across Trinidad and Tobago, including those relating to the location and design of development; management of urban and rural environments; management of water resources; and resilience to hazard risks and potential disasters.

Given the predicted effects of climate change, the potential for the occurrence of natural hazards and their likely impacts need to be identified, assessed and kept under review. Natural hazards affecting or potentially affecting Trinidad and Tobago include:

- flooding (coastal, riverine, flash and urban);
- landslides;
- bush fires;
- storms and hurricanes;
- coastal hazards; and,
- earthquakes.

Hazard risks such as flooding and landslides tend to be more place-specific than others such as storms and hurricanes. Generic examples of high and significant risk areas include steep and unstable slopes (to which Policy 3 and specific hillside development policies relate); low-lying drainage basins and river reserves; and land in close proximity to highways from which runoff rates may be very high.

Planning Authorities should work closely with the EMA, Office of Disaster Preparedness and Management (ODPM), the Tobago Emergency Management Agency (TEMA) and other relevant bodies to ensure that, where relevant, spatial planning decisions are informed by up to date Hazard Risk Assessments, considering both the probability of hazards occurring and the vulnerability of communities to their impacts. A risk-based sequential approach should thereafter be applied to the location of development, aiming to avoid hazard risk to persons and property where possible, and to manage the risk where avoidance cannot be achieved.

Whilst the development of land located within an area classified as being at High Hazard Risk may occasionally be deemed appropriate in order to meet wider sustainability objectives, this should normally be avoided in favour of lower risk locations. Within this general guidance, each development will need to be assessed on its own merit.

At the strategic and regional levels, preparation or procurement of Hazard Risk Assessments should be the responsibility of the National Planning Authority and the Planning Authorities. They should ensure that detailed Hazard Flood Risk Assessments are taken in to account when preparing SDPs. The EMA will have an important role in assessing applications for CECs and advising on applications for planning permission.

Appropriate site development standards should be formulated and applied and adherence to building codes enforced. Where appropriate, applicants for planning permission will need to provide the required information so that assessments can be carried out by the relevant authority.

New development should be planned so as to avoid increased vulnerability to hazards by adopting the following systematic approach:

1. **Assess** on the basis of Hazard Risk Assessments;
2. **Avoid** development in the most vulnerable areas, where possible;
3. **Control and Adapt** development so that it is hazard resilient and resistant; and,
4. **Mitigate** against any residual hazard risk.

Appropriate hazard risk mitigation measures should be identified as part of these assessments. Areas should not be considered in isolation from the wider context. For example, the effect of rainwater run-off from development on downstream locations needs to be taken into account. Inter-agency and inter-authority cooperation is imperative in this regard.

Provision and availability of emergency services and shelters should be taken into account when decisions about the location of development are being taken. It will also be necessary to consider evacuation plans and routes and associated muster points to ensure that these are not obstructed by inappropriate development.

The terms High, Significant and Low Hazard Risk used in Policy 20 relate to the ODPM's six point categorisation, as follows:

- **High Risk** equates to ODPM's "Very High" and "High" categories;
- **Significant Risk** equates to ODPM's "Moderate" category; and,
- **Low Risk** equates to ODPM's "Low", "Very Low" and "No Known Risk" categories.

For the purposes of Policy 20, "vulnerable uses and forms of development" include (but are not limited to): housing; emergency service bases; hospitals; hotels and, developments in or at which large numbers of people will congregate.

POLICY 20: MANAGING HAZARD RISK

Planning Authorities should work closely with the EMA, ODPM, TEMA and other relevant bodies to identify and assess potential for the occurrence of hazards and the impacts they may have within the areas for which they are responsible, taking due account of predicted effects of climate change. Such matters should be taken into consideration when allocating land for development and considering development proposals. This approach should be followed in relation to all natural hazards (including hazards induced or exacerbated by the impact of human activity on the natural environment), including: flooding; landslides; fire; storms and hurricanes; coastal hazards; and earthquakes.

Decisions should be informed by up-to-date Hazard Risk Assessments, which should consider both the probability of hazards occurring and the likely impact of such occurrences. Hazard Risk Assessments should be undertaken before land use allocations are made in SDPs and before planning applications are considered in areas identified as being at high or significant risk of hazards. Applicants for planning permission should be required to provide appropriate and adequate information for the Planning Authority's consideration.

A risk-based sequential approach should be applied to the location of development to avoid hazard risk to persons and property where possible and to manage any residual risk: areas of higher hazard risk should normally be avoided and areas of low hazard risk should be preferred.

Vulnerable uses and forms of development should be prohibited in areas of High Hazard Risk.

Development should only be allowed in an area of High or Significant Hazard Risk if it can be demonstrated that there is no alternative site available in an area of Low Hazard Risk, and the risk can be mitigated satisfactorily, without increasing risk elsewhere.

Development that would affect land that is required for current and future hazard risk management should not be permitted unless it is demonstrated that such development would not negate or compromise that function.

Developments likely to increase the probability of hazards or exacerbate their impacts (on the site involved or elsewhere) should not be permitted unless satisfactory measures to mitigate those effects and impacts are to be undertaken in association with the development.

Appropriate and proportionate limitations and restrictions (which may include design and construction specifications) should be imposed whenever development is allowed in areas of High or Significant hazard risk.

Whenever mitigation measures are required, implementation in full should be required as a condition of permission being granted or, if appropriate, by enforceable legal agreement.

Where climate change is expected to increase hazard risk and or impact, new development may not be appropriate and some existing development may not be sustainable in the long-term. In such circumstances, consideration should be given to measures to facilitate the relocation of development (including, for example, housing and critical infrastructure) to more sustainable locations.

IMPLEMENTATION

- The establishment of cross-agency arrangements, which include public agencies such as the EMA, ODPM and TEMA, in undertaking Hazard Risk Assessments;
- data collection, dissemination, and monitoring, including the following detailed GIS data:
  - current hazard risk information;
  - data such as river flow information, wave and current information;
  - outputs of specific studies and modelling;
- The Development Management process.

5.4 Sustainable Infrastructure

Achieving Harmonised Regional Development by developing the particular potential of each area will depend on enhancing capacity for the movement of people, goods, energy, services and information between places, as well as providing other critical trunk infrastructure such as potable water, waste water supplies, and drainage provisions for major water courses. For spatial planning, physical networks of infrastructure are of particular relevance, as they influence the location, timing and extent of development and have spatial impacts themselves.

Prevailing macro-economic and budgetary conditions will influence the rate at which progress is made in delivering these networks and network improvements. Strategic planning and co-ordination of both state and private sector infrastructure will be essential to underpin the effectiveness of initiatives to deliver elements of the different networks. These considerations apply to national programmes, the plans of individual government agencies and those of the private sector.

5.4.1 Moving Towards Sustainable Transport

Across the nation, the problems associated with travelling have become part of everyday life. Despite increasing capacity and improvements, roads quickly become recongested, resulting in wasted time, excessive energy/fuel consumption and unhealthy levels of pollution. Public transport services are poorly organised and even with subsidies, initiatives such as the Water Taxi Service have not realised projected utilisation[20].

Whilst car ownership levels in Trinidad and Tobago are the highest in the Caribbean (apart from Puerto Rico), a substantial proportion of the population does not have unimpeded access to a car. This includes young people below the legal driving age; many older people who prefer not to drive; people living in a household in which the single car is normally used by another member, people with certain physical and mental challenges, and people who either through economic circumstances or preference do not own or have access to a car. A car-dependent culture in which public transport is underdeveloped effectively disadvantages these sectors of society.

Good transport, accessibility and mobility are central to a prosperous economy. While infrastructure supports transport, the ultimate goal is to change travel behaviour, which requires fundamental cultural change. To this end, the focus should be on elements of the Travel Demand Management toolbox which push modal shift, with infrastructure as one of multiple measures, rather than the main measure.

Transport policy cannot be developed in isolation as policy in other sectors is a key driver of travel behaviour and affects transport policy. For example, policy in areas like education (school choice), public health (lifestyle diseases and preventive health), security and criminal justice and land use all affect transport needs and policy direction. Accordingly, an appreciation of the transport repercussions in every policy area is needed, as well as and the reverberations in other policy areas made by decisions in transport policy.

The symbiotic relationship between land use and transport is critical and strategies like transit-oriented development should be emphasised and promoted. In this regard more sustainable development patterns should therefore be planned and supported by encouraging development that, through its location, design and implementation, reduces the need to travel overall, and supports the use of public transport, walking, cycling and water related travel options. This can be achieved by focusing certain types of development within existing urban areas, where concentrations of population should make the provision of improved public transport most economically viable, and other complementary measures such as mixing land uses.

For smaller towns and rural settlements, the accessibility issues associated with a dispersed pattern of development which contribute to marginalisation can be addressed, at least in part, through the development of alternative and complementary infrastructure including enhanced ICT.

Whilst additional infrastructure is necessary, simply providing ever more capacity on roads is not the answer as additional capacity will not solve the underlying problems. Furthermore, in the long term the continued damage to towns and cities, quality of life, and the environment will be unacceptable. Similarly, no single transport improvement will effect the change that is required to address the acute congestion problem. Rather, a series of complementary transport strategies aligned to national policy priorities is needed to deliver the necessary improvements.

A Sustainable Transport Strategy (Information Box 13) will ensure full integration of all modes of transport, and full integration and coordination with spatial, social and economic policies. A suggested framework for developing such a strategy follows. This should be pursued in tandem with the NSDS and SDPs.

Framework for developing a Sustainable Transport Strategy

The pre cursor to the development of Sustainable Transport Strategy is a comprehensive understanding of how the current transport network is performing. This enables the future performance of the network to be forecast by introducing "what if" scenarios that allows an assessment of the impact of spatial planning and/or infrastructure intervention. A monitoring regime that enables the following data to be collected is therefore needed:

- daily traffic flows on the key arterial routes (traffic signal loops can be utilised for this purpose on some routes);
- bus and maxi-taxi patronage;
- road traffic accident data;
- flight, water taxi and ferry patronage; and,
- 'stated preference' survey for trip mode, purpose, origin and destination.

This comprehensive data set can then be utilised to develop a transport model to provide a clear evidence base to test policy intervention. For example, the mode-shift effects of reducing the fuel subsidy and investing in public transport could be tested. Equally, by testing spatial planning scenarios, highway infrastructure improvements could be prioritised according to their contribution to economic growth. It is feasible that the transport model partially developed for the Comprehensive National Transport Study can be the starting point.

While infrastructure improvements will assist in addressing localised poor levels of service on the transport network, it is certain that infrastructure intervention alone will not accommodate the forecast demand. To achieve significant improvement to access there is need for a long-term programme of encouraging behavioural change, supported by the infrastructure to provide travel choice.

The issues considered as essential elements of a fully integrated approach within the Sustainable Transport Strategy should include the following:

1. mass transit;
2. public transport;
3. links to Tobago;
4. road development programme; and,
5. walking and cycling.

Further details on these issues are set out in Section 6.1 of Surveying the Scene.

[20] *Situational Analysis: Assessment Report, APDSL October 2012.*

Information Box 13
SUSTAINABLE TRANSPORT

'Sustainable transport' refers to ways of moving people, goods and information that reduce the impacts on the environment, economy and society. Options include:

- using more energy efficient transport modes, such as walking or cycling, and public transport;
- improving transport choice by increasing the quality of public transport, cycling and walking facilities, services and the environments;
- improving the efficiency of car use, such as using more fuel efficient vehicles and car-pooling;
- using cleaner fuels and technologies;
- using telecommunications to reduce the need to travel;
- planning the layout of urban areas to bring people and their needs closer together; and,
- developing policies on the basis of research and an integrated evaluation of the various options and promoting them through a Sustainable Transport Strategy.

POLICY 21: PRIORITISING SUSTAINABLE TRANSPORT

When formulating SDPs and considering planning applications, Planning Authorities (working with other public and private agencies as necessary) should:

- identify sites and routes, which could be critical in developing infrastructure to widen transport choice in line with the Sustainable Transport Strategy, and protect these from other forms of development;
- ensure that new development is located so as to minimise the need to travel and maximise the use of sustainable transport modes;
- minimise the impact of additional travel demand through the use of measures such as travel planning, safe and convenient public transport, walking and cycling links and integration with existing infrastructure;
- support the provision of public transport services and existing or proposed transport interchanges;
- ensure that plans do not negatively impact on the safety and movement of traffic on the road network;
- provide (but not over-provide) appropriate and effective parking provision and servicing arrangements;
- maximise opportunities to utilise the sea for alternative transport and/or freight transport; and,
- ensure that measures to encourage people to walk and cycle (for example shaded streets, safe and convenient streets for pedestrians (including those with physical and visual challenges) and cyclists) form part of development proposals where possible.

Development which is likely to have significant impact on the transport network should be accompanied by a Transport Assessment, forecasting the likely demand for travel generated by the development and considering how this demand can be accommodated within the transport network. Where it is demonstrated that the potential demand is greater than the local capacity, the developer should be required to provide strategies for mitigation.

IMPLEMENTATION

- Establishment of an National Transport Authority and preparation of Sustainable Transport Strategy with an implementation plan;
- Development Management process, included requirements for transport assessments and implementation of the required mitigation measures where this is necessary;
- investment in infrastructure informed by wider policy objectives and coordinated across transport modes;
- a fully coordinated public transport system timetabled to meet business and social need;
- interchange to outlying regions providing good accessibility to rural communities and encouraging the decentralisation of key services;
- an affordable and effective form of mass transit of appropriate scale that does not require an unacceptable level of Government subsidy;
- information technology to be utilised to encourage the use of public transport through 'real time' information;
- Awareness campaign to educate persons on their options and how their transport choices affects them financially and environmentally;
- free movement of freight using highway capacity freed up by the mode shift to public transport; and,
- enhanced links to Tobago by air and sea

5.4.2 Making the Most of Information and Communication Technologies (ICTs)

ICT has been identified by the MTPF as critical to promoting regional and global competitiveness. In that context, it is important for local businesses to increase their capability to provide a suite of ICT services. As such, initiatives like the National ICT Plan, enhanced nationwide broadband capability, iGovTT Strategy and National Innovation Strategy, if implemented will go some way to ensuring the appropriate infrastructure conditions are provided.

Improvements in ICT can also have an important role in overcoming issues of peripherality that rural areas, including eastern Trinidad and northeast Tobago, are exposed to. It is particularly important that the opportunities brought about by good ICT infrastructure are realised and factored into spatial planning decisions. For example, ICT requirements should be built into new development at an early stage of the design process. The integration and importance of ICT as part of a shift to sustainable transport cannot be overstated. For instance, the use of ICT to eliminate traffic congestion by way of online services is effectively a sustainable transport policy.

POLICY 22: PRIORITIES FOR ICTs

When formulating SDPs and considering planning applications, Planning Authorities (working with other public agencies and the private sector as necessary) should:

- support the expansion and improvement of telecommunications and broadband infrastructure to achieve a good level of national coverage;
- establish policy-based criteria to ensure that any adverse impacts of ICT related infrastructure are acceptable and are appropriately mitigated;
- support the development of facilities that provide access to ICT for business, learning and social connection;
- maximise the potential of ICT to improve the connectivity of remote and rural communities;
- ensure that ICT provision for new development is considered at the design stage; and,
- promote the take-up and use of ICT by businesses, and the public and voluntary sectors.

IMPLEMENTATION

investment in and implementation of the programmes identified in the National ICT Plan;

implementation of initiatives such as the National Spatial Data Infrastructure and the Single Electronic Window; and,

Development Management process.

5.4.3 Generating and Using Energy Sustainably

In Trinidad and Tobago, energy from oil and gas has been plentiful for several decades and as a result of subsides, relatively inexpensive. Related to this, consumption of energy and its conversion into national wealth has been relatively inefficient compared with other nations. To ensure that the future energy demand path gives clear priority to energy reduction and efficiency, and avoids the potential danger that new generating capacity is developed in preference to demand management measures, the energy hierarchy set out in Figure 10 has been established. Whilst renewable energy targets should be devised, they should not become a driver for more energy installations than are necessary to meet energy needs efficiently. The linkages with the objective of moving towards sustainable transport should be made, particularly in view of the quantum of energy that this sector consumes.

In addition to reducing energy use and improving efficiency, a substantial increase in the proportion of energy from renewable and low carbon sources is recommended to reduce reliance on natural gas to generate electricity. Whilst renewable energy is not currently contributing to the national grid, there is potential to explore and develop solar, wind and biogas sources and there are compelling reasons to do so, which include:

- increased export potential;
- economic diversification and national development;
- national energy security; and,
- climate change issues.

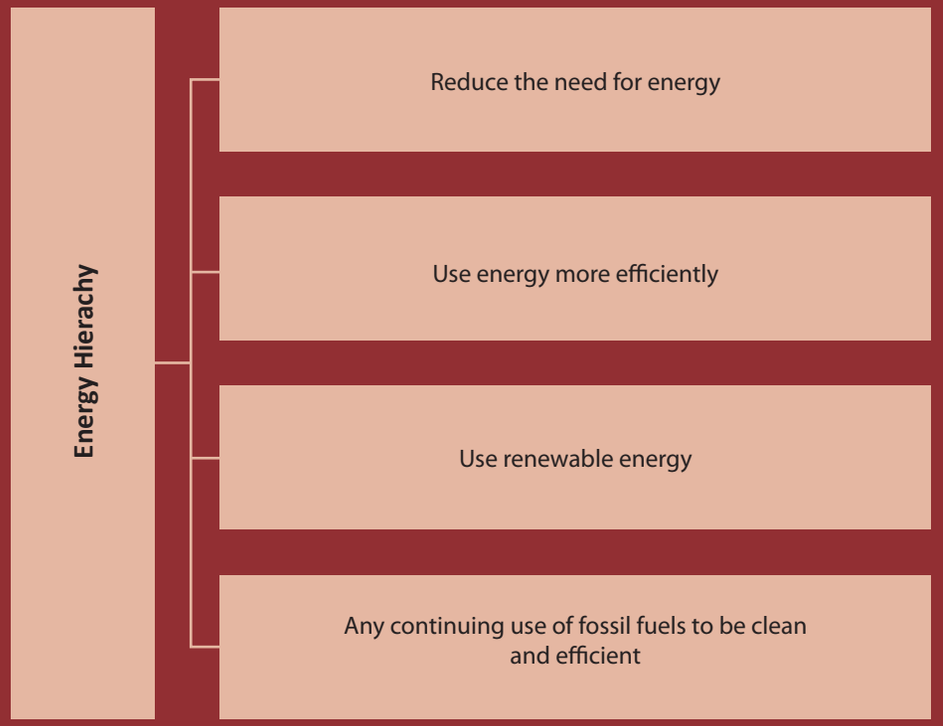


Figure 10: Energy hierarchy

As well as supporting appropriate large-scale renewable energy projects, the planning system can contribute to reducing energy demand through measures to improve the location of development, site layout and building design. Given that 29% of the country's electricity demand comes from the residential sector[21], there is the potential for Green Design principles to contribute to greater energy efficiency and a national reduction in carbon emissions.

To achieve the highest viable resource and energy efficiency, substantial areas of new development should be located where there is accessibility by means other than the private car, where energy can be sourced from decentralised energy supply systems, or where there is clear potential for this to be realised. Such systems include renewable or low carbon sources.

Small-scale renewable electricity generation at the building scale, such as photovoltaic cells and micro wind turbines can contribute to a reduced energy demand from the grid. These technologies can additionally help to reduce the carbon emissions in the refurbishment and redevelopment of existing buildings.

Most forms of energy generation involve some impact on the human and physical environment. Depending on the type, scale and location of the proposed installation, the following may need to be assessed to ensure that adverse impacts are minimised:

- Air quality and emissions;
- The relationship with the existing natural and built environment ;
- Ecology;
- Aviation;
- Flood risk;
- Landscape and aesthetics
- Land use;
- Noise and vibration;
- Socio-economic factors;
- Traffic and transport;
- Waste management.

[21] *Ibid footnote 30, page 81*

POLICY 23: ENERGY EFFICIENCY

When preparing SDPs and considering planning applications, Planning Authorities (working with other relevant public agencies as necessary) should:

- Promote measures which reduce energy use in line with the Energy Hierarchy; and,
- Secure energy efficiency through the application of green design principles in respect of the location, design and construction of buildings and urban areas.

Proposals for low carbon energy schemes should be supported where it is demonstrated that any environmental, economic and social impacts can be addressed satisfactorily.

IMPLEMENTATION

- The Development Management process;
- review of petroleum and electricity subsidies to allow the renewable energy to compete;
- development of a legal framework to support the development of large-scale renewables;
- collaboration and coordination between all relevant public agencies and research institutions;
- education and awareness about clean energy, energy saving and energy technologies;
- development and implementation of the National Waste Management Plan;
- implementation of the Beverage Container Recycling Bill;
- development and implementation of a Sustainable Transport Strategy; and,
- ensuring fiscal support for the capital costs associated with renewable energy infrastructure.

5.4.4 Managing Waste Safely and Efficiently

Economic and population growth has coincided with an increase in the amount of waste produced. However, this has not been matched by the necessary expansion in waste management infrastructure. All solid waste is currently transferred to landfill. Due to the age of the five existing landfill sites, they are operating with minimal adherence to current environmental standards and are approaching maximum capacity. For example none are lined to protect nearby ground or surface water from contamination by leachate. The well-publicised health hazards of the current waste management infrastructure are compounded by the nuisance and risk arising from indiscriminate dumping of rubbish on roads and in local watercourses and rivers.

Delivering a national integrated waste management system in line with the hierarchical approach to waste management (Figure 11) set out in the Integrated Solid Waste/Resource Management Policy for Trinidad and Tobago, Final Draft 2012 will require coordinated action by a wide range of interests. A critical step will be promoting a fundamental change of behaviour in citizens to reduce waste and promote re-use and recycling.

New development should contribute to the minimisation of waste in its construction and operation. The waste generation and disposal implications of new development should additionally be given higher priority in view of the significant and wide-ranging socio-economic and environmental impacts of poor waste management.

Planning Authorities should address the need for additional waste management facilities in SDPs. Such facilities include materials recycling facilities, composting operations, inert processing plants and waste transfer facilities. Additional waste recovery capacity is likely to be needed; this may include energy from waste, or other technologies such as anaerobic digestion. Further capacity is likely to be required to deal with hazardous waste. Failure to minimise waste and maximise recycling will increase the requirement for other forms of waste recovery, and will necessitate the development of further new or expanded facilities.

The planned provision of new capacity and its spatial distribution should be based on clear policy objectives, robust analysis of data and information, and an appraisal of options. When identifying sites for waste management facilities, agencies should consider the potential synergies with existing land uses such as existing and former industrial land. Consideration should also be given to the benefits and opportunities for locating re-processing facilities in close proximity to waste treatment facilities, and allocating suitable land for re-processing in conjunction with sites for waste treatment in SDPs.

In some circumstances, larger facilities may need to be supported by smaller transfer stations to reduce overall transport distance and associated environmental impacts. The location of these facilities should be determined through SDPs.

Waste management should be considered alongside other spatial planning concerns, such as transport, housing, economic growth, natural resources and regeneration, recognising the positive contribution that waste management can make to the development of sustainable communities, and should be integrated effectively with other strategies.

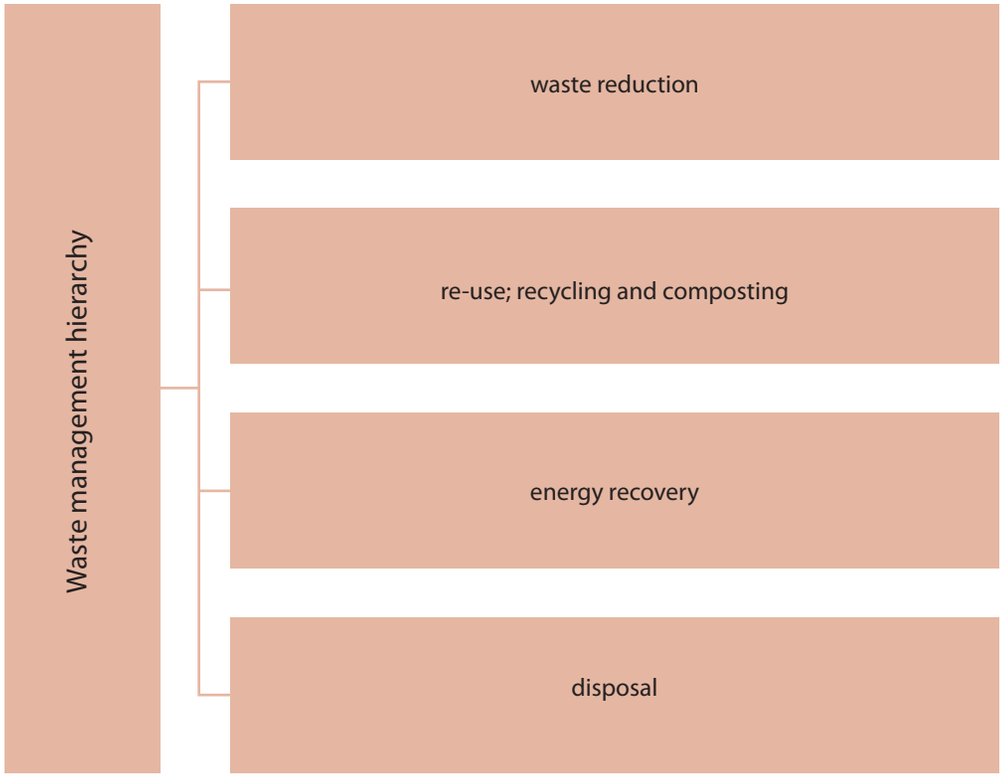


Figure 11: Waste management hierarchy

POLICY 24: WASTE MANAGEMENT

When preparing SDPs and considering planning applications, Planning Authorities (working with other relevant public agencies as necessary) should:

- promote the solid waste hierarchy and prioritise solid waste management in terms of prevention, reuse, recycling, recovery and disposal;
- require adequate and appropriate measures for the treatment and disposal of both solid and liquid waste in association with all relevant developments; and,
- make provision for safe and environment-friendly waste management facilities in appropriate locations and based on up to date assessments of need and land availability.

IMPLEMENTATION

- Development Management practices;
- data collection, dissemination, and monitoring;
- collaboration and coordination between Planning Authorities and the Trinidad and Tobago Solid Waste Management Company Limited (SWMCOL);
- education and awareness raising about waste reduction and recycling; and,
- development of operational and environmental performance standards for waste management.

6. REGIONAL PLANNING GUIDANCE

6.1 Spatial Strategy Overview

The NSDS process provides the opportunity to reassess the direction the nation should take in response to the different circumstances, threats and opportunities faced. In so doing, the need to support strong and stable communities through Harmonised Regional Development has been identified as the preferred approach to the spatial distribution of development.

Unplanned urbanisation has contributed to the degradation of the natural – and in some cases – built environment and low levels of investment in rural areas. This has been exacerbated by an uncoordinated and haphazard approach to transport provision, which has resulted in increasingly unsustainable development patterns, involving an increased need to commute, lengthened travel times and limited alternatives to the private car.

Some rural areas have suffered from insufficient economic activity to support the population. This has resulted in people either moving out of rural communities (out-migration) or having to travel greater distances to access services and job opportunities (creating larger transient populations).

In this context, four major challenges are identified:

1. Urban Renaissance – developing the major urban clusters in such a way that they can increasingly meet their own economic and social needs and enhance the identity of individual settlement centres;
2. Rural Renaissance – addressing more effectively the major changes which are challenging the traditional roles of rural areas;
3. Diversifying and modernising the economy – ensuring that opportunities for growth are linked to meeting needs and helping to reduce social disparities; and,
4. Modernising transport systems – supporting the sustainable development of the whole country.

These challenges cannot be addressed in isolation; they must be addressed simultaneously as different aspects of the same fundamental issues. This will require new development, investment and action, particularly to support the development of an efficient transport network, to bring forward appropriate development opportunities, and to improve the quality of the environment.

The Spatial Strategy can be broadly summarised as seeking to enable all parts of the nation to meet their own needs sustainably and in a mutually supportive way. The elements required to achieve this are articulated in the Core Policies set out in Chapter 5. The Core Polices develop the principles for achieving sustainable development embodied in the Vision (Chapter 2) and Objectives (Chapter 3), via the preferred spatial development option of Harmonised Regional Development (Chapter 4). They are intended to inform and guide the nature and location of development and improvements at the regional and local levels. As such, they should be read together with the Spatial Strategy and Regional Planning Guidance set out in this Chapter.

For spatially harmonised patterns of development to evolve over the next ten years certain conditions must also exist to foster a strong platform for business development, which is responsive to both domestic and global economic forces. These include:

- critical mass of population;
- range of skills;
- innovation capacity; and,
- clustering of businesses and firms (including those involved in inter-related activities and in high-growth, knowledge-intensive and technology–based specialisation).

It is recognised that different responses are required for different regions. However, as places have functional inter-relationships with each other, so too those different responses should be complementary. The aim of the Spatial Strategy is therefore to facilitate the creation of a dynamic network of connected places, all important in their own right and with distinct characteristics, but with reinforcing economic, cultural and social functions.

An important part of this is the development of a network of dynamic urban centres that will act as the foci for major investment in employment, retail and recreation and developments, whilst working in partnership with strong rural areas. Broadly speaking, this will require enhancing the economic and social roles of the major urban clusters, and building on their roles as service centres for cultural activities, with Port of Spain reinforcing and strengthening its role as the capital city by achieving world city status.

6.1.2 Integrated Planning Regions

In seeking to address the challenges currently faced, as set out above and elsewhere in the suite of NSDS documents, the Strategy seeks to identify sub-national planning regions for which guidance is outlined in the following sections. This guidance will provide the basis and context for the review and development of MSDPs.

Nine Integrated Planning Regions (IPRs) have accordingly been identified. It should be clearly understood that these IPRs entail neither the realignment of existing administrative areas, nor are they intended to create yet another layer of service area boundaries. They are proposed as functional units for the purposes of rational planning and area-specific strategy formulation (Figure 12).

The IPRs have been defined for areas of similar geographical characteristics including landscape character and environmental considerations, as well as socio-economic development objectives and goals. They have additionally been informed by an awareness of matters that will require cooperation between neighbouring administrative areas. The identification of an IPR does not suggest that the constituent areas are perfectly homogenous. In some instances, it may be considered that whilst an IPR has generally similar characteristics, there are distinct areas within the IPR by virtue of form and function or infrastructural challenges. In such cases, the IPR may be separated in Sub-Regions, as in the case of both the North Coast IPR and Port of Spain and the Capital Region IPR.

The following sections provide a strategic framework for the IPRs. The guidance outlined for the IPRs does not set out to cover every issue in detail, but rather to provide a broad spatial framework to be developed and detailed at the regional and local levels and applied in conjunction with the thematic Policies in Chapter 5.

Integrated planning regions

Figure 12: Integrated Planning Regions

6.2 Tobago

Spatial planning in Tobago has received separate attention at the national level for the past fifty years. During that time, various plans and studies have focused on Tobago and a number of overarching themes and objectives have consistently appeared. These include:

- economic diversification;
- strengthened local economy within the national context;
- maintenance of strong community spirit, values and traditions;
- creation of a safe and pleasant physical environment;
- environmental protection and management of natural resources; and,
- improved physical and social infrastructure.

Those issues remain consistent with the national planning and strategic policy objectives, but their implications and interpretation need to be considered in the distinctive context of Tobago as is indicated in the CEDP 2.0.

The growth momentum experienced in Trinidad is not replicated in Tobago. Tobago accounts for 4.58% of the national population[22] and contributes less than 1.2% to GDP. However, it is difficult to truly assess the " multiplier effect" as most of the expenditure in Tobago can be traced to goods and services provided through Trinidad.

The overarching strategic CEDP objective is to increase Tobago's contribution to national GDP whilst, at the same time, improving the quality of life for Tobagonians. Although the population of Tobago is relatively small, the growth rate has been significantly higher than Trinidad's between 2000 and 2011[23], resulting in greater commensurate demand for infrastructure, goods and services.

Tobago depends on substantial financial support from Central Government and the THA is the major employer on the island. In this context, economic diversification is considered to be even more important for Tobago. The development of gas-based industries is a relatively recent strategic focus and is part of the THA's diversification strategy.

The thrust of the MTPF has much in common with the CEDP 2.0. Diversification of the economy, human resource development, security and safety, and participatory governance or devolution, are areas where the MTPF immediately converges with CEDP in its earlier and present incarnation. In particular, the fact that Tobago's economic strategy is built on the expansion of tradable sectors that are different to those that currently form the base of the export sector of Trinidad places Tobago at centre stage in the diversification strategy of the national economy. Therefore, policy at the national level should dovetail well with CEDP 2.0. It further states:

"CEDP 2.0 proposes a bold new perspective for Tobago that is focused on building a diversified, productive, self-sustaining economy; a society that is safe, secure and amenable to diversity; and a position of equal partnership with Trinidad in the development of the national space. The concourse towards this vision is via two lanes:

1. *Attainment by the THA of greater devolution for Tobago from the Central Government and*
2. *Reform of Tobago's domestic institutions so that the development process is sui generis at the local level while maintaining harmony with national initiatives."*[24]

While the mainstay of the island's economy has been tourism, the recent global recession provided the impetus for diversification of both national and local economies. The differences in physical landscape and geography, typology and level of economic investment/development and the social/cultural dynamics between the North-East and South-West of Tobago warrants a distinction in the approaches to development of key tradable sectors. As such, the South-West Tobago is identified as a growth pole for the emerging "green" industrial and manufacturing sectors with the North-East being targeted as the focus for aggressive revival of the tourism sector (in particular eco/adventure and heritage) and related linkage industries. The CEDP 2.0 acknowledges that if Tobago is to compete successfully in global markets, the tourism sector needs to grow and diversify. The potential to enhance agriculture, fishing and related processing activities, and establish collaborative links to the tourism sector is also recognised. It is with this rationale that Tobago is divided into two IPRs.

6.2.1 North-East Tobago

Description

The North-East Tobago IPR comprises the parishes of St John, St Paul, St Mary, St David and St George. Roxborough plays an important service centre role beyond which residents travel to the south west (Scarborough) to access necessary services.

Population characteristics and trends

The North-East IPR has a relatively low density of population, averaging 115 persons per km^2 . This is less than the national average of 259 persons per km^2 for 2011. The combined population of the five parishes based on data from the 2011 Census is 27,778 persons. Population growth over the period 2000 to 2011 was 14.6% (the national growth over the same period is 5.2%).[25]

Development considerations

The IPR is characterised by a high quality natural environment and resource base and is dominated by the extensive Main Ridge Forest Reserve. Established in 1765, it is the world's oldest legally designated protected forest reserve. It is home to a number of indigenous flora and fauna, including Environmentally Sensitive Species and other endemic species. Its unique and intrinsic ecological value is a strong tourist attraction to both domestic and international visitors.

The IPR also features a number of important habitats, including Little Tobago, which is an important seabird-breeding site. The coastline features a number of isolated coves and beaches, and the offshore dive sites are considered to be some of the best in the Caribbean. Speyside, and to a lesser extent, Charlotteville, are the main centres for diving activities on the northern side of the island.

[22] 2011 Population and Housing Census, Preliminary County, CSO, Ministry of Planning and Sustainable Development
[23] Situational Analysis: Assessment Report, APDSL October 2012
[24] The Comprehensive Economic Development Plan, 2013-2017, CEDP 2.0: Redoubling the Effort, Volume 1, THA, October 2012
[25] 2011 Population and Housing Census, Demographic Report, CSO, Ministry of Planning and Sustainable Development

North East Tobago IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

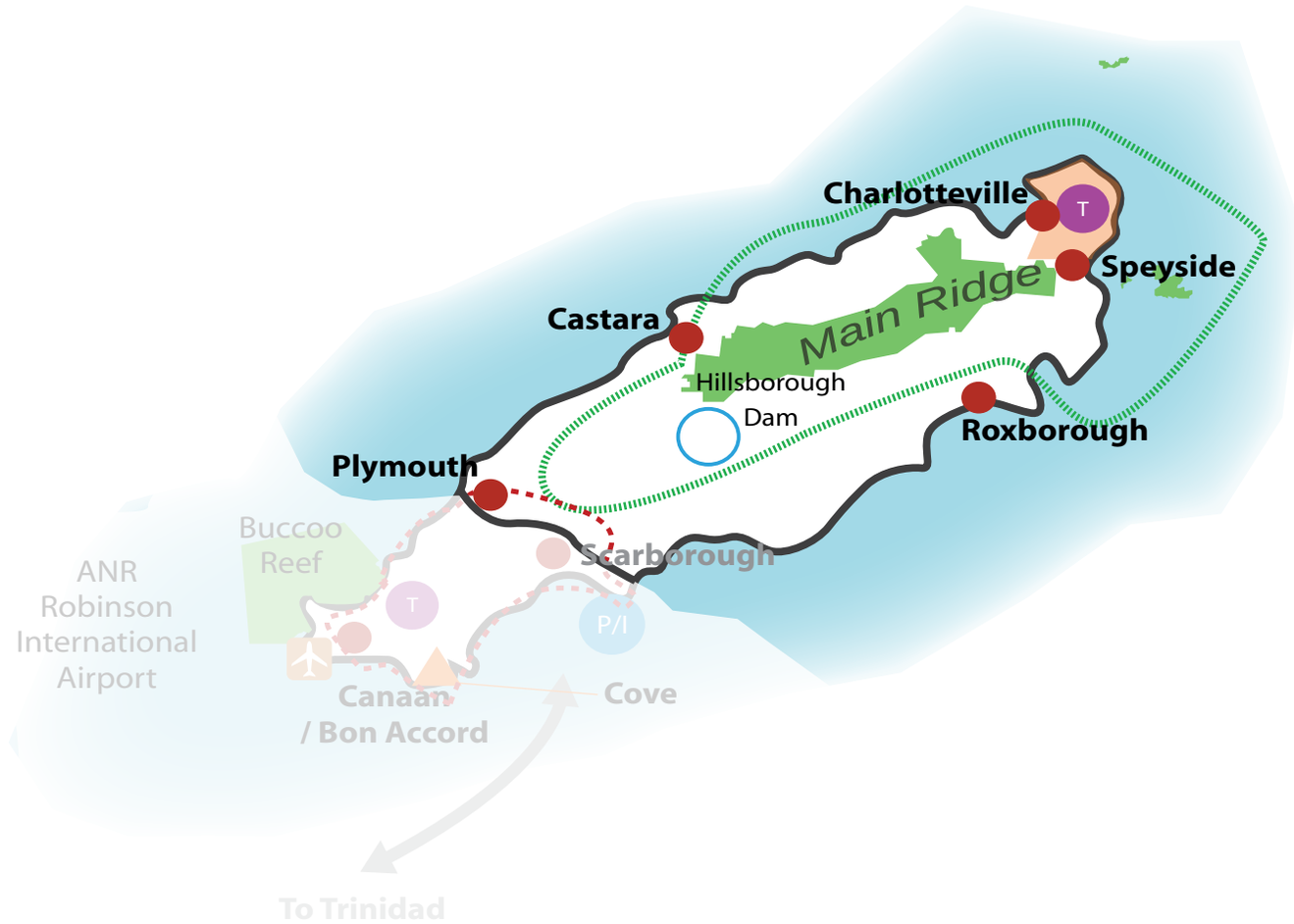


Figure 13: North-East Tobago IPR

The development pattern is characterised by pockets of low-density ribbon settlements strung out along the main Northside and Windward Roads. Its predominantly rural economy relates to fishing, agriculture and tourism, but the productivity of these sectors is relatively low. This is largely the result of the artificial labour shortage created by a large proportion of the working population being employed by the THA.

The North-East IPR contains the North-East Tobago Growth Pole, which is intended to stimulate improved productivity in "eco-tourism, including development of diving industry, community enterprises, agriculture and horticulture." Whilst the local area plan can facilitate the spatial requirements for these growth sectors, it will be necessary for this to be coupled with efforts to address the balance of labour (from government and social security programmes) and up-skill and educate people in order to support these industries.

Regional Guidance

The environmental considerations – both sensitivities and assets – of this IPR demand very careful management. In this context, the Growth Pole initiative necessitates an integrated approach to facilitating and delivering development of the sectors identified to ensure that intensity and scale continues to be low impact and economic productivity is enhanced without detrimental effects. The role and function of Roxborough will need to be strengthened to support the additional services and provide the further critical mass necessary for economic consolidation.

REGIONAL PLANNING GUIDANCE FOR NORTH EAST TOBAGO

The THA should work collaboratively with communities and developers to promote development in North East Tobago which generates environmental, economic and social benefits of both local and national significance by:

- enhancing the tourism potential both for local communities and for visitors, with the development of specialist tourism clusters based on natural environment, historical sites and community cultural activities to be explored as interpreted and detailed in the CEDP;
- developing a tourism cluster based on diving at Charlotteville and Speyside to be explored as interpreted and detailed in the CEDP;
- making adequate provision for appropriate rural development, including sustainable agriculture, fishing and related processing activities and creating linkage industries to the tourism sector;
- protecting and enhancing the distinctive landscape, natural and cultural assets of the area;
- ensuring development is consistent with the landscape setting, natural environment and ecological qualities of the Main Ridge Forest Reserve; and,
- consolidating the role of Roxborough by supporting service expansion and some residential development of an appropriate scale to deliver the necessary critical mass for the IPR. These developments should be consistent with the sequential approach to selecting land for development advocated in Policy 2.

6.2.2 South-West Tobago

South-West Tobago IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

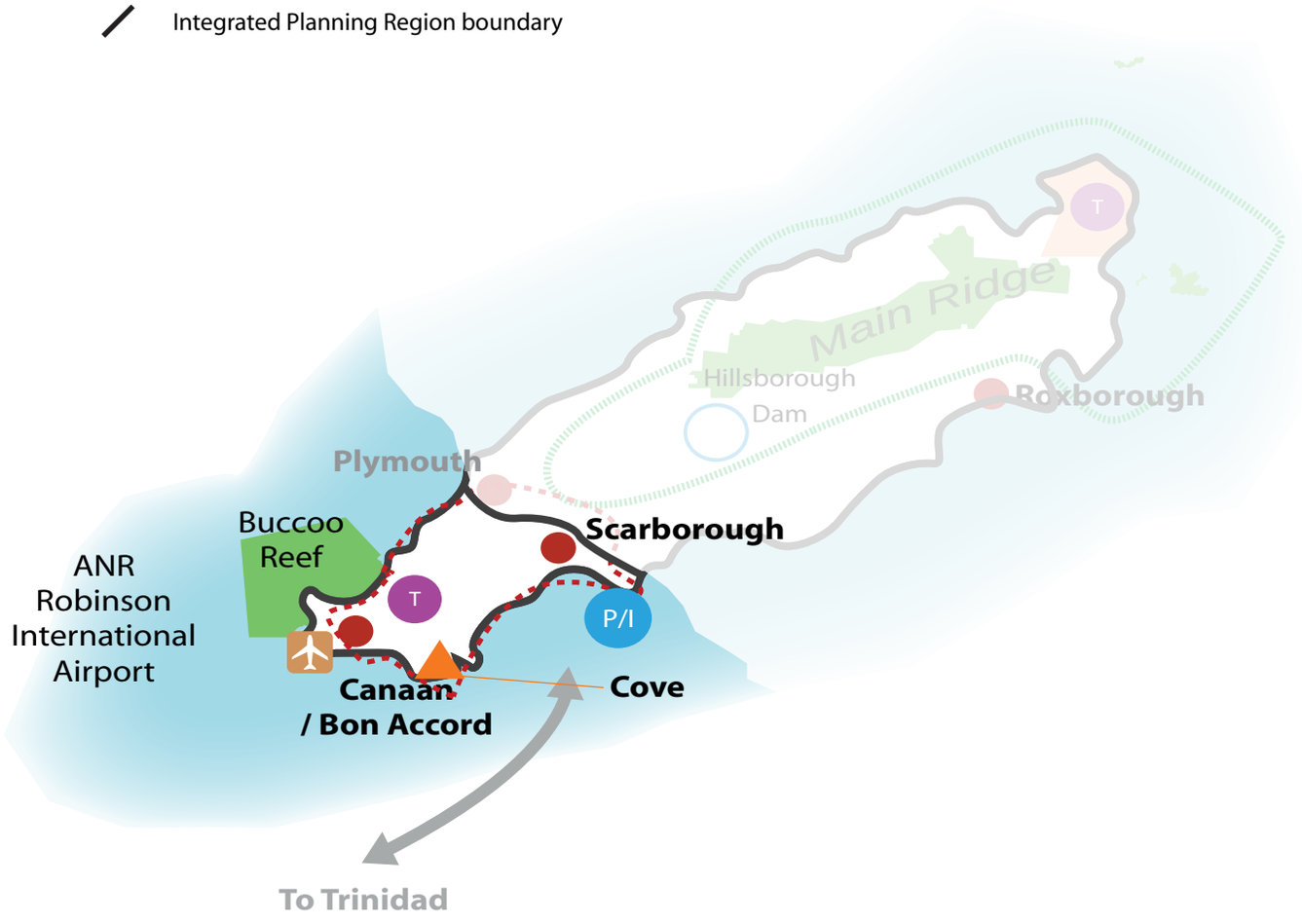


Figure 14: South-West Tobago IPR

Description

The South-West Tobago IPR comprises the parishes of St Patrick and St Andrew. Scarborough is Tobago's capital, the primary centre of commercial activity and the main centre of governance.

Population characteristics and trends

Based on data from the 2011 Census, the combined population of the constituent parishes of this IPR is 33,096 persons, which represents just over half the island's total population. Population density is 561 persons per km^2 which is considerably higher than that of 115 persons per km^2 for the North-East IPR. The rate of growth over the period 2000 to 2011 was 10.9%, which is less than that of the North-East IPR.

Development considerations

South-West Tobago has historically been the focus of settlement and economic activity, due to possessing the largest area of flat land on the island. Investments in infrastructure and services have tended to reinforce this trend and the 'skewed' development pattern has continued. Key facilities and assets within this IPR include:

- ANR Robinson International Airport;
- the majority of tourism accommodation stock (approximately 80%), particularly around the Crown Point and Buccoo Village areas;
- the majority of the population;
- the main seaport at Scarborough;
- government and public services;
- business hubs, including supporting services for the hospitality industry; and,
- easier transport access.

With the exception of some notable historical and modern buildings, the quality of the built environment in Scarborough is relatively poor and would benefit from investment to refurbish and rejuvenate parts of the town. The centre could be further enhanced by the development of sustainable transport solutions to the congestion problem.

The ANR Robinson International Airport is the subject of on-going expansion to cater for domestic and international visitors and to comply with health, safety and operational requirements. The need for further expansion should be considered in the context of a sustainable transport strategy (which may, for example, identify additional ferry routes to Trinidad and establish bicycle/ footpaths throughout Scarborough and environs) to ensure that investment decisions deliver the greatest benefits for inter-island commuters and visitors alike.

The Eco-Industrial Development Company of Tobago (E-IDCOT) Ltd. was established in 2009 to drive forward this agenda by developing, promoting and managing a number of eco-industrial parks in Tobago. The first of these is the Cove Eco-Industrial and Business Park at the Cove Estate.

An electricity plant at the Business Park supplies electricity to all of Tobago and preparations are underway for the site to become the landing point for natural gas in Tobago. In addition to development associated with energy infrastructure, the Park is also expected to provide the following:

- accommodation for business incubators;
- a micro-entrepreneurial complex and shared business centre;
- an innovation centre for research; and,
- a development and an administration centre.

The Cove Eco-Industrial and Business Park is identified in the MTPF as a strategic development project to foster economic growth, diversification and job creation within industrial sectors. The development of industrial related activities should be pursued carefully to ensure that the tourism industry, which is based upon the island's ecosystems and environmental attributes, is not undermined.

REGIONAL PLANNING GUIDANCE FOR SOUTH WEST TOBAGO

The THA should work collaboratively with communities and developers to promote development in South-West Tobago which generates environmental, economic and social benefits of both local and national significance by:

- facilitating the development of a waste water treatment plant and other environmental infrastructure as necessary to ensure that the tourism clusters around Crown Point and Buccoo Village can thrive and where appropriate, expand;
- supporting the appropriate development of an eco-industrial cluster at Cove Estate to facilitate innovation and high value job creation;
- strengthening the role of Scarborough to support the highest level of service provision for Tobago by encouraging inward investment, harnessing its cultural and tourism potential and improving the urban fabric; and,
- promoting an integrated approach to new physical development, with considerations to include coastal zone management, waste management and sustainable transport matters, including the potential for port relocation.

Regional Guidance

To ensure that the tourism sector is able to thrive, key environmental issues must be addressed. For example, the present wastewater disposal arrangements are threatening water quality for the habitats of the Bon Accord Lagoon/ Buccoo Reef Complex at the beaches around Buccoo Reef. Improvements are needed, not only to allow for further tourism related development to take place, but to ensure that the existing businesses are able to prosper and the very assets upon which the industry is based are protected and conserved.

Economic diversification should also be achieved through the opportunities at Cove Estate. The consolidation of Scarborough will be required to support this and the networks of rural settlements and villages across both IPRs.

6.3 Chaguaramas and the Islands

Chaguaramas and the Islands IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

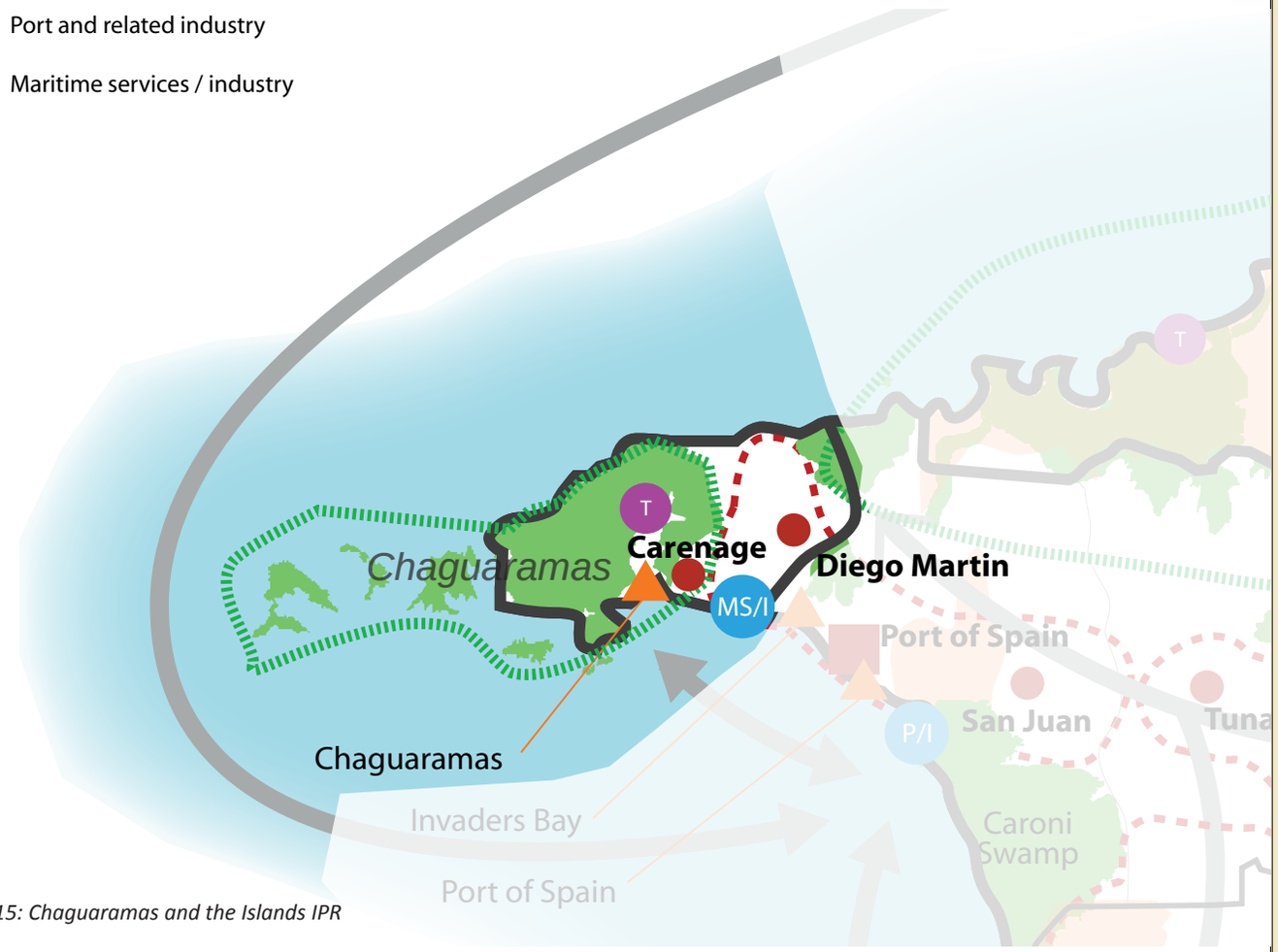


Figure 15: Chaguaramas and the Islands IPR

REGIONAL PLANNING GUIDANCE FOR CHAGUARAMAS AND THE ISLANDS

The CDA should work with other agencies, across regional boundaries, to promote the development of the area in ways that generate environmental, economic and social benefits of both local and national significance by:

- enhancing the distinctive landscape, natural, cultural and historic assets of the area;
- developing the recreational and business potential both for local communities and for visitors, including the expansion and upgrading of the Chaguaramas Golf Course as a potential to form an anchor of a recreational based cluster;
- creating a world class visitor experience which generates sustainable economic benefits for local communities, including the potential for tourism and eco-tourism based on beach facility upgrades, military history museum, restoration of historical sites e.g. Chacachacare ;
- making provision for the appropriate development of improved, expanded and additional maritime facilities and related services to facilitate the creation of an international yachting and maritime service destination;
- protecting the agricultural lands in the Tucker Valley, promoting opportunities to improve their productivity and exploring the potential to develop an agricultural cluster; and,
- ensuring development is appropriate to the National Park settings.

New residential development should be restricted to small-scale infill development to meet local needs. Development should be of a scale and type necessary to secure and service a mixed and balanced community.

Accessibility improvements both within and beyond the area should be addressed in ways that respect the National Park's purposes and priorities. Particular attention should be given to improved public transport; walking and cycling links, and the feasibility of a water taxi service should be explored as part of a sustainable transport strategy and related to tourism. Improved road connections should also be explored, including across the Covigne col.

Governance

Chaguaramas and the Islands fall under the jurisdiction of the Diego Martin Regional Corporation. By Act 37 of 1972, the CDA was established. Section 14(1) sets out the principal function of the CDA as "the laying out and development of the North-West Peninsula." As part of this, the area is the subject of a Development Order under section 9(1) of the Town & Country Planning Act, which sets out specific requirements regarding development within this area. This Order dates back to 1975 and is in need of review.

Description

This IPR comprises Chaguaramas and the offshore islands of Gasparee, Little Gaspar Grande, Monos, Huevos, and Chacachacare i.e. the area administered by the Chaguaramas Development Authority (CDA). The dominant service centre for this IPR is Port of Spain, although a lower level of services is available in Carenage.

Population characteristics and trends

Chaguaramas and the Islands comprise a predominantly undeveloped area within the context of the largely suburban Diego Martin administrative area. Based on 2000 Census data, the community of Chaguaramas had a population of 903 persons and projections in the Diego Martin Final Draft Development Plan envisage a static population for the same community between 2000 and 2020. This should be kept under review. Given a land area of some 14,572 acres, the population density is very low.

Development Considerations

The area was leased to the United States in 1940 for the construction of a naval base, and returned to Trinidad and Tobago control in 1967. The restriction on access to the area during the period under US control continues to have implications for ingrained perceptions that the area is for free enjoyment by the people of Trinidad and Tobago. This, together with ongoing tension between public and private use rights and issues relating to historic displacement of previous land occupiers, has served to maintain a relatively low level of built development in the peninsula, except in pockets on the coast along the Western Main Road.

To some extent, this is in keeping with the need to protect the IPR from over-development whilst focusing on its natural environment. However, well-balanced, environmentally sensitive development to further establish the area as a premier eco-tourism and eco-business destination is supported.

The environmental and social significance of this area should be recognised in plans for its future development, exploring opportunities to protect and conserve the natural environment, whilst allowing the area to meet its potential as a key site for eco-tourism, agriculture and maritime industries (leisure and commerce). As a National Park, Chaguaramas should be maintained and celebrated as a natural area that residents and visitors can continue to access for recreation.

Vehicular access to the area is limited to the Western Main Road in and out, which experiences increasing levels of congestion as the potential of the area for business, recreation and entertainment continues to grow. Means of tackling the peak-time congestion problem should be explored through an integrated approach to transportation planning and should include consideration of water-links together with other appropriate modes of transportation.

The inland landscape is dominated by the Northern Range slopes, valleys and tropical mountain forest cover. Fertile agricultural lands lie along the Tucker Valley and popular beaches can be found on the northern and southern coasts. The recent boardwalk development and landscaping of Macqueripe Bay, the golf course, local hiking opportunities and locally-grown produce for sale all provide an excellent basis for strengthening the eco-tourism and recreation potential of the area.

However, poor waste management and run-off from inland degrades water quality. The pattern of currents in the Gulf of Paria also results in sewage, solid waste and chemical pollutants collecting from sources along other parts of the west coast. A coordinated approach to managing these issues is therefore required.

Despite water quality issues, the sheltered nature of the waters along the southern coast makes these areas popular recreation destinations. Local marinas are well-utilised, accommodating both domestic and internationally owned yachts. Given its location outside of the main hurricane belt, Trinidad's west coast is an attractive location to harbour vessels and Chaguaramas has the potential to develop this opportunity further.

The area provides a vibrant environment for a wide range of business and industrial activities, from dockyard services and other maritime-related industries to small high-tech enterprises. With several education campuses (UTT; Trinidad & Tobago Hospitality & Tourism Institute; Caribbean Fisheries Training & Development Institute) located here, there are opportunities to develop the synergies between entrepreneurial businesses, eco-business and research/ training providers of potentially international significance in an attractive environment close to Port of Spain.

The distinctive characteristics of the offshore islands should be given consideration in future development plans. Their physical and built environments provide opportunities for recreation and tourism including the Gasparee caves and the former leper colony on Chacachacare.

The future development of this IPR is key to achieving the Strategy's broader objective of making prudent use of natural resources to deliver economic diversification. This Strategy recognises the potential for this area to become a national and regional flagship in sustainable approaches to development.

Regional Guidance

In keeping with its socio-economic characteristics and in recognition of its environmental significance, the proposals for the Peninsula are strongly grounded in environmental protection and conservation. In this context, the IPR has a wealth of largely untapped natural resource-based development opportunities, particularly in the tourism and eco-tourism, agriculture, maritime and eco-business related sectors. The aspirations of the CDA to harness this development potential in an economically viable but sustainable way are supported in principle and it is recommended that sensitive proposals be developed in the SDP for the area.

Proposals should include options to address existing access deficiencies to Chaguaramas. Whilst strategic settlement expansion or population growth is not currently envisaged, it is recommended that this be kept under review pending further development of detailed proposals by the CDA. Proposals for the adjacent IPR recommend strengthening of the role of Carenage as a service centre, with the intention of providing a higher level of services for residents of and visitors to the area.

6.4 North Coast

Figure 16: North Coast IPR

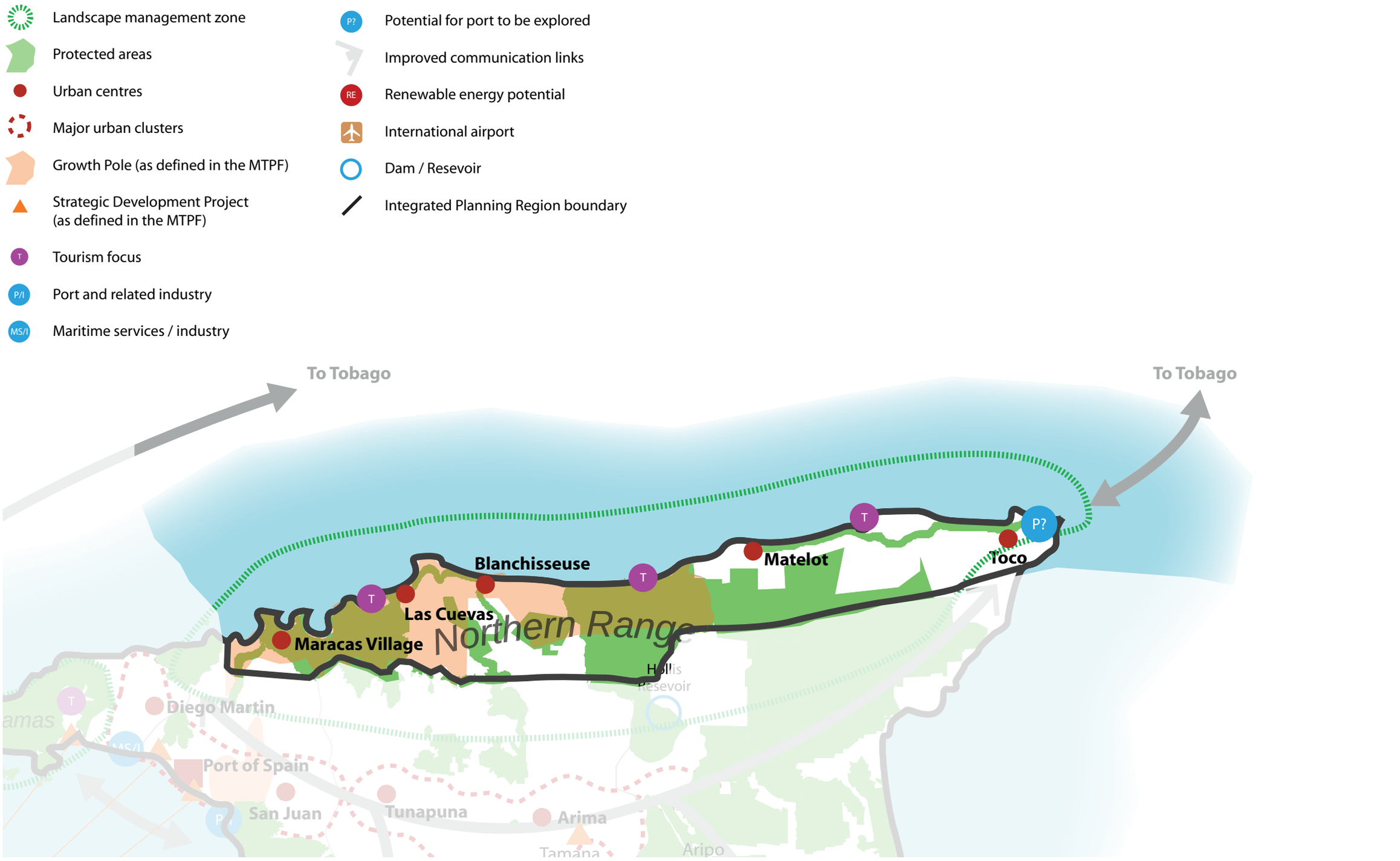


Figure 16: North Coast IPR

Governance

The North Coast IPR covers parts of the San Juan/Laventille, Tunapuna/ Piarco and Sangre Grande Regional Corporation areas.

Description

This IPR has been identified on the basis of its environmental similarities and to some extent, the common challenges of accessibility and resulting isolation. It comprises most of Trinidad's north coast and extends from the eastern edge of Diego Martin valley in the West to Toco in the east. It is broadly defined as the seaward side of the Northern Range watershed and includes part of the Landscape Management Zone covering the Northern Range. The main or significant settlements within the IPR include Maracas, Las Cuevas and La Fillette in the west, and Toco, Sans Souci, Grand Riviere and Matelot in the east.

The Northern Range comprises a mix of land use classifications: Protected Zones, Forest, and Cleared/Grassland. That so much of the area is given over to land-scape protection and natural forest cover is reflected in the relatively low level of development in the IPR as a whole, which is largely confined to the coastal side of the Range. In keeping with the level of development, the area is predominantly rural in character, characterised by small nodes of settlement in the valleys and along the narrow coastal plain.

Economic activities are closely linked to the local natural resource base, particularly that of fishing and the marine environment and relatively small-scale agriculture. Given the coastal location, the area is important for recreation and local tourism. These assets form the basis of the North Coast Growth Pole strategy, the focus of which is "real estate including hotels, fishing, marine, agriculture and services". [26]

There is limited road access which results in restricted connectivity both within the region and to other parts of Trinidad. The North Coast Road provides access to the communities in the western part of the Sub-Region and goes only as far as Blanchisseuse. There is no link through to Matelot in the east. Instead, the communities in the eastern part are accessed via Toco along the Paria Main Road. These access deficiencies contribute to the sense of isolation of communities, particularly those in the east such as Matelot and Grande Riviere. However, the relative isolation also directly contributes to the preservation of the uniqueness, environment and culture of these areas and any development strategy should be mindful of this balance.

Whilst the IPR has been identified on the basis of its similar coastal characteristics, given the accessibility challenges and in particular, the lack of road connection between the communities Blanchisseuse and Matelot, two Sub-Regions have been identified: the Maracas Sub-Region and the Matelot Sub-Region.

Maracas Sub-Region

Population characteristics and trends

As a whole, the North Coast of Trinidad is a rural area. Based on 2000 Census data, the Maracas Sub-Region has a low population density and projections in the San Juan Laventille Final Draft Development Plan envisage a static population for the constituent census communities between 2000 and 2020. Given the nature of the Maracas Sub-Region as a whole, it is assumed that the population will remain largely static. This should be kept under review.

Development Considerations

This Sub-Region includes the popular beaches and communities of Maracas, Las Cuevas, La Fillette and Blanchisseuse. Additionally, the area is home to a number of waterfalls and nature trails. The recreation potential has long been recognised and proposals for integrated resort type developments at Las Cuevas have previously sought to harness this potential for local and international markets. To date, such proposals have for the most part not progressed past the planning stage.

The North Coast Road provides access to the Sub-Region either via Port of Spain or the Eastern Main Road and Saddle Road through San Juan. This Sub-Region enjoys relatively better accessibility to Port of Spain, which is the main service centre for the area. As such, it is considered better suited in principle for the identified Growth Pole priorities regarding real estate driven development.

This Sub-Region also includes those areas of the North Coast that are not currently accessible via road i.e. the areas between Blanchisseuse and Matelot. These comprise important environmental areas, which feature near pristine natural habitats and resources. Further potential for low-impact, community-based eco-tourism in this remote and relatively undisturbed coastal area should be explored, along the lines of that practiced by the community-based Brasso Seco Paria Tourism Action Committee.[27]

It is important that development in this Sub-Region is carried out in ways that respect its unique environmental qualities and ecology and is compatible with the expectations and aspirations of local communities.

Matelot Sub-Region

Population characteristics and trends

Based on 2000 Census data, the Matelot Sub-Region has a low population density. Whilst projections in the Sangre Grande Final Draft Regional Development Plan are not disaggregated to the census community level, the overall growth projections to 2020 (21.9%) for the administrative area appear excessive against the actual growth to 2011 (15.9%). Given the nature of the Matelot Sub-Region as a whole, population dynamics should be closely monitored and kept under review.

Development Considerations

This Sub-Region includes the north east coastal communities strung out along the Paria Main Road between Toco and Matelot. The environmental quality and natural resources in this Sub-Region are high, and include the heavily forested slopes of the Northern Range and the wind swept beaches, including Grand Riviere (designated a Prohibited Area), Sans Souci and Madamas, some of which are important nesting sites for endangered turtle species. This unique combination of natural features makes the East Sub-Region an ideal eco-tourism destination. At the same time, as a result of the relative isolation of some of its communities, there is a need to provide for enhanced access to services and facilities in a way that is consistent with their character.

The primary service centre within the Sub-Region is the rural district centre of Toco, and beyond that, Sangre Grande, which is an hour's drive away. Whilst Toco is relatively small (1,133 persons in 2000), it has long provided services to residents in its catchment area. Given the relative isolation of the communities in this area, in terms of the Growth Pole priorities and in advance of their detailed development, the Sub-Region is considered more appropriate for community based eco-tourism developments and other resource based activities including fishing, agriculture and associated services.

[26] *Innovation and Lasting Prosperity, Medium-Term Policy Framework 2011 – 2014*, Ministry of Planning and the Economy October 2011
27 http://www.brassosecoparia.com

Regional Guidance

Careful consideration needs to be given to the scale and form of development required to facilitate the Growth Pole intentions. Proposals for 'growth' should be considered carefully to ensure that any related physical development is of a scale and form that is appropriate for the environmental sensitivities of the area.

The priority for the North Coast IPR should be to foster a network of strong rural communities within a thriving natural environment. Within this context, traditional economic sectors of agriculture and fishing should be strengthened and tourism leisure activities, in particular community-based tourism, enhanced to achieve social and economic benefits at both the local and national level in accordance with wider strategic aims.[28]

Issues of connectivity require careful consideration to ensure that problems associated with isolation are overcome without damaging the environmental, cultural and social qualities that give this area its unique character. Solutions to be explored should include ICT and recommendations borne out of a sustainable transport strategy Within that context, the scope to develop further coastal water transport links should be considered as a potential component of an integrated solution.

In the Matelot Sub-Region the role of Toco as an important service centre should be strengthened. The potential for port development should be explored, as development of ferry links with Tobago could be a means of creating the critical mass necessary to support a higher level of service provision for local communities. Should such proposals evolve, they will need to do so in conjunction with broader sustainable transport solutions. This must include the development of strong public transport links along the whole of the East/West Corridor and dependable rural public transport services through to Toco. Improved links to Sangre Grande could also be developed on this basis.

Toco should be consolidated as the sub-regional service centre and in view of the environmental constraints and likely adverse impacts, settlement expansion in the IPR as a whole should be adequately justified and based on recommendations coming out of more detailed local area plans.

In the Maracas Sub-Region, tourism-based opportunities, at both the scale of 'integrated resort development' and community-based eco-tourism should be carefully considered to ensure that environmental integrity is safeguarded. The critical mass of population required for this form of development is likely to come from the urban corridors adjacent this Sub-Region. Improved transport connections could therefore render settlement expansion largely unnecessary.

REGIONAL PLANNING GUIDANCE FOR THE NORTH COAST

Planning Authorities should work collaboratively to promote development in the North Coast IPR which generates environmental, economic and social benefits of both local and national significance by:

- protecting and enhancing the distinctive landscape, natural and cultural assets of the area, including important turtle nesting beaches at Grand Riviere;
- developing recreational and tourism potential both for local communities and for visitors;
- making provision for the appropriate development and upgrading of agriculture and fishing facilities with particular focus on Maracas, Las Cuevas, Blanchisseuse, Matelot and Toco; and,
- ensuring that the visual impact of development on the coastal and inland landscape is fully considered and the landscape quality appropriately safeguarded.

In the Maracas Sub-Region priority should be given to strengthening the tourism role of existing beach facilities and undeveloped coastal assets. The potential to create a tourism cluster focused on integrated resort development at either Las Cuevas or Maracas should only be explored in conjunction with sustainable transport solutions to improve connectivity of the sub-region to the Capital Region.

The role of Toco as the service centre for the Matelot Sub-Region should be consolidated. The potential for port related development incorporating ferry links to Tobago should be considered in this context and as a potential means of promoting appropriately scaled community based, eco-tourism.

[28] The work of the Turtle Village Trust - http://www.turtlevillagetrust.org - demonstrates how ecological, economic and social objectives can be married together to produce sustainable results.

6.5 Eastern Trinidad

Eastern Trinidad IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

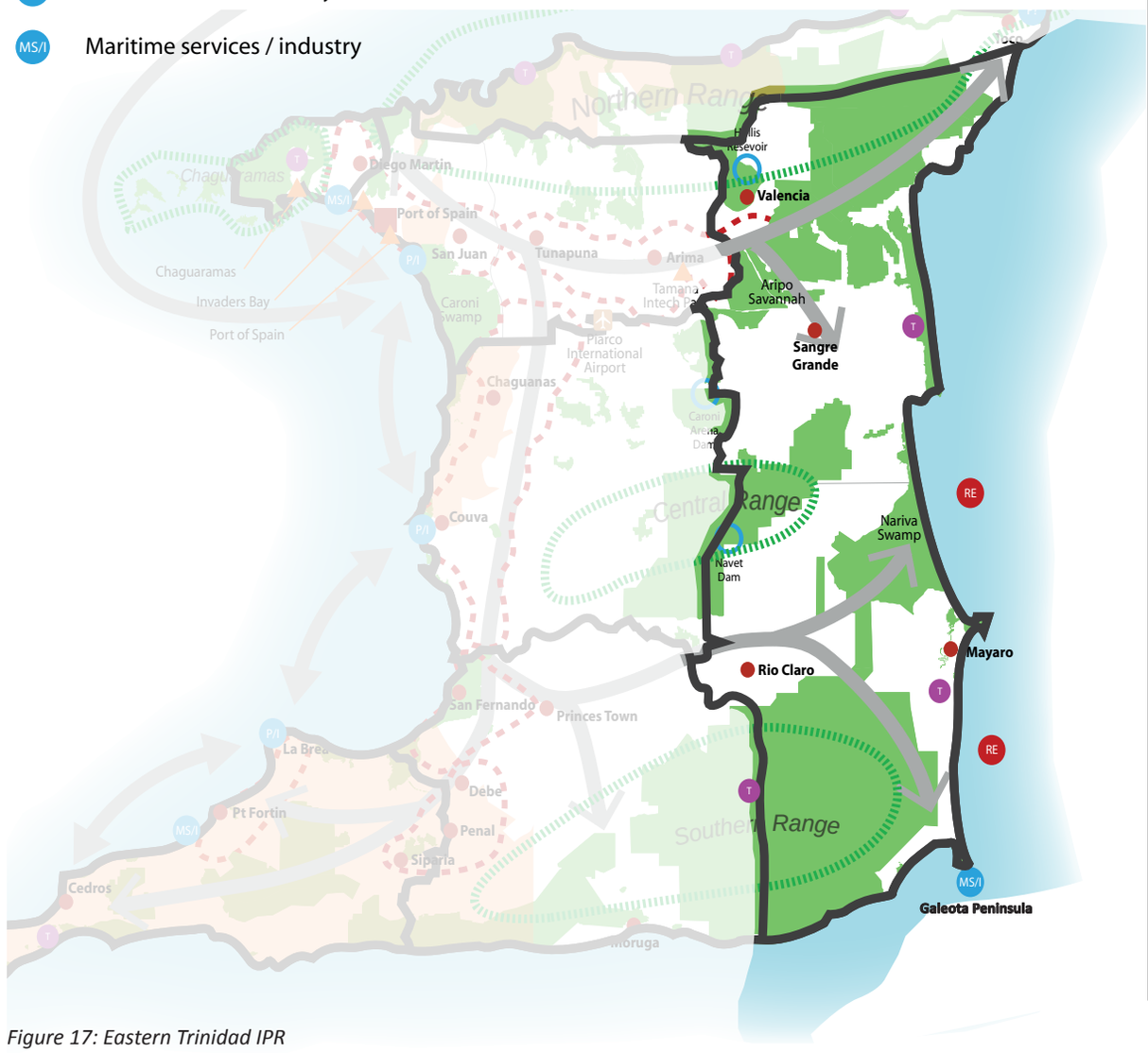


Figure 17: Eastern Trinidad IPR

REGIONAL PLANNING GUIDANCE FOR EASTERN TRINIDAD

Planning Authorities should work collaboratively to promote development in the Eastern Trinidad IPR which generates environmental, economic and social benefits of both local and national significance by:

- protecting and enhancing the distinctive landscape, natural and cultural assets of the area, including turtle nesting beaches at Matura, coastal areas (particularly those prone to erosion), and protected areas including the Nariva Swamp and Aripo Savannah;
- developing recreational and tourism potential both for local communities and for visitors, including a sporting ground/stadium in Sangre Grande;
- making provision for the appropriate development of agriculture potential in terms of food production and forestry; and,
- ensuring that the visual impact of development on the coastal and inland landscape is fully considered and the landscape quality appropriately safe guarded.

Planning Authorities should adopt integrated approaches to redress the current level of deprivation by planning for opportunities to strengthen existing resource-based economic activities and to explore the potential to diversify into new sectors such as renewable energy, particularly along the Manzanilla and Mayaro coastlines. To ensure that economic activities and their locations are complementary, consideration should be given to both coastal management and sustainable transport related issues.

Exiting resource-based economic operations should be supported and appropriate expansion encouraged where it can be demonstrated that they can operate in harmony with natural environmental processes and without adverse impact on local communities. The development of an energy industry cluster in Galeota/Guayaguayare and provision for ancillary development, including expansion of port operations at Galeota, is supported in principle, subject to implementation in accordance with environmental and other legislation.

The prevalence and impact of sand and quarrying extraction, particularly illegal extraction, in the areas around Sangre Grande and Valencia should be reviewed and a programme of restoration of despoiled lands and restriction of further unregulated activities embarked upon.

The roles and functions of Sangre Grande, Rio Claro and Mayaro/Plaisance should be consolidated to ensure that the viability of the service offer is maintained and residents are able to access facilities that serve their day-to-day needs.

Governance

The Eastern Trinidad IPR comprises the areas covered by the Sangre Grande and the Mayaro/Rio Claro Regional Corporations.

Description

This IPR has been identified on the basis that its constituent area - the Sangre Grande and Mayaro/Rio Claro Regional Corporations – comprise the lowest density of population with the highest levels of deprivation as measured by the HDI [29]. The main service centre for the northern part of the IPR is Sangre Grande, with Rio Claro and Mayaro Plaisance functioning as the main service centres for the southern part.

Population characteristics and trends

Based on 2000 Census data, the Eastern Trinidad IPR had an average population density of 55 persons per km^2, which increased to 64 persons per km^2 in 2011. Population grew by 6.5% for the Mayaro/ Rio Claro administrative area over the period 2000 to 2011, and 17.8% for Sangre Grande. This represents an average for the IPR of 12%, which is higher than the national average of 5.2% for the same period.

Development Considerations

This IPR is predominantly rural in character and although it comprises just over one-third of Trinidad's land area, it accounts for only about 9% of its population [30].

The economic base is related to a rich variety of natural resources available within the IPR for agriculture, fishing, sand and gravel quarrying, and the off-shore exploitation of oil and gas. The practices and operations associated with these sectors require sound monitoring and management to ensure that direct and indirect impacts do not degrade the ecosystems that are vital in sustaining local communities and which contribute to the potential for eco-tourism. This need is particularly evident around Sangre Grande and Valencia, in terms of the prevalence of sand and gravel deposits, which are mined both legally and illegally and often indiscriminately.

In terms of population size, Sangre Grande proper is one of the largest centres in Eastern Trinidad. Its business district and range of service provision cater to a vast network of rural communities. The thriving Valencia urban centre also lies within this IPR. Whilst there is local employment within these settlements, large numbers of residents commute to Port of Spain and other centres within the East/West Corridor.

Rio Claro and Mayaro are the main service centres for the southern part of the IPR and their roles should continue to be strengthened. Energy resources are currently being exploited by both foreign and local firms (including state-owned enterprises) around Guayaguayare and Galeota. This area could be developed into an energy related industry cluster for operations in the Southern Caribbean and South America. The promotion of maritime related industries to support this activity should be explored. There is an abundance of agricultural land, as well as potential for resort and eco-tourism along the distinctive Manzanilla-Mayaro coastal corridor.

The IPR comprises a number of Protected Areas, including the Aripo Savannah, with its unique Moriche Palms; the Ramsar Convention's designated wetland at Nariva Swamp; and the Trinity Hills and forest reserves further south. The conservation of these assets is a priority and should be considered in the context of both active forest management and delivery of appropriately scaled eco-tourism development.

Further energy related development activity within the coastal zone (including offshore wind based energy generation around Manzanilla and Mayaro) should be considered within the context of ICZM to ensure that only the most appropriate locations are exploited with adverse impacts mitigated.

Regional Guidance

Given the environmental characteristics of the IPR, environmental protection and enhancement are important in respect of both the special features as well as adjacent areas. However, on account of its status as one of the most deprived regions in the nation, development and revival of resource-based industries is proposed, as well as exploration of potential in previously untapped areas. This development must be properly and proactively monitored and managed.

Consolidation and strengthening of the role of the main service centres are recommended, which will include improving their physical and social infrastructure. This should be supported by the sustainable revitalisation and appropriate management of existing resource-based industries. To ensure that the benefits of these investments are realised by local communities, sufficient training and education provision should be promoted to up-skill the labour force. Managed growth of some of these key regional settlements may be appropriate given the need for strengthening the viability of the IPR as a whole. The potential role of improved ICT networks and facilities should be explored.

[29] Trinidad and Tobago Human Development Atlas 2012, CSO, Ministry of Planning and Sustainable Development
[30] 2011 Population and Housing Census, Demographic Report, CSO, Ministry of Planning and Sustainable Development

6.6 Port of Spain and the Capital Region

Port of Spain and the Capital Region IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

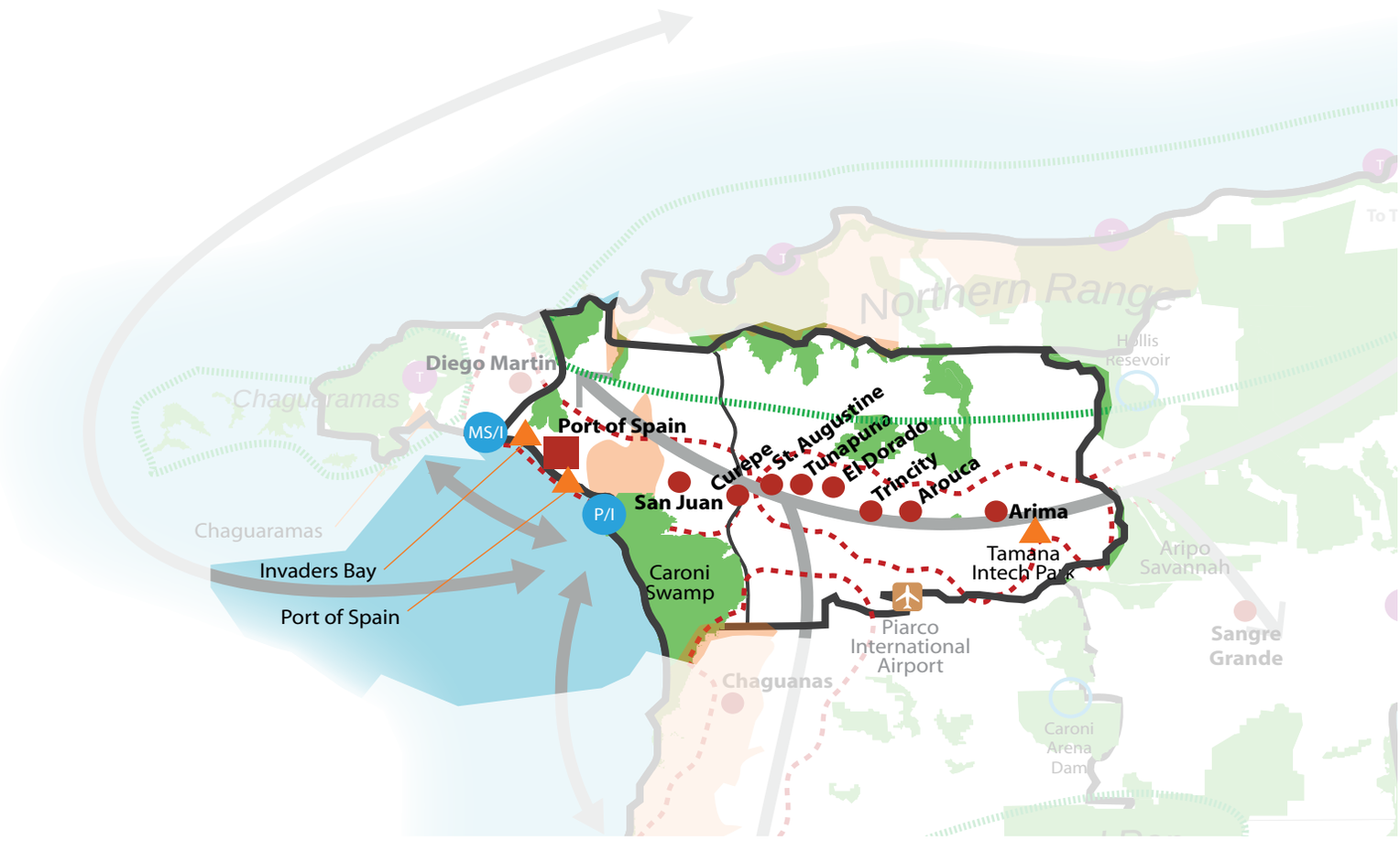


Figure 18: Port of Spain and the Capital Region IPR

Governance
This IPR comprises the areas covered by the City of Port of Spain and the Borough of Arima, as well as parts of the Diego Martin, San Juan/Laventille and Tunapuna/Piarco Regional Corporations.

Description

This IPR comprises the national capital and primary urban centre of Port of Spain as well as its wider metropolitan area. It includes the East/West Corridor, a zone of continuous urban development along the southern edge of the Northern Range. In addition to the City of Port of Spain, significant urban centres include San Juan Barataria, Diego Martin, Curepe, St Augustine, Tunapuna, Trincity and Arima. It is the similar urban characteristics of this area that has resulted in its identification as an IPR.

Development Considerations

One of Trinidad's two main conurbations, this IPR comprises a densely populated corridor of development located along the main east west transport routes i.e. the Eastern and Western Main Roads, the Churchill Roosevelt Highway and the Priority Bus Route. The northern edge of the extensive urban area is defined for almost the whole of its length (from Carenage to Arima) by the Northern Range. To the south the defining edges are the Gulf of Paria, the Caroni Swamp and the Caroni River. These strong physical features contribute significantly to the metropolitan area's character as well as shaping its linear form and function.

As a result of continued spatial expansion over time, the boundaries between the once distinct centres along these routes have become increasing blurred, merging into an indistinct and near unbroken corridor of urban development. Expansion has involved encroachment into increasingly unsustainable and unsuitable locations, in particular the foothills and valleys of the Northern Range, other sensitive environmental areas and agricultural lands at rates which have accelerated over time.

In 2011, this conurbation accounted for approximately 41% of the national population, falling slightly from 45% in 2000. Collectively, it functions as a national level attractor. Whilst this allows for economies of scale on the one hand, it also serves to further intensify existing regional disparities and directly contributes to critical issues such as congestion. Given its national role and function, despite a slowing of growth, the predominance of this region is unlikely to change and if left unchecked will continue to grow in increasingly unsustainable ways with commensurate problems and issues.

Whilst the region has concentrated urban development in common, two Sub-Regions can be identified; Port of Spain Core and the East/West Corridor.

Port of Spain Core Sub-Region

Population characteristics and trends

The population of Port of Spain grew very rapidly during the first half of the 20th century, peaking at about 94,000 in 1960, and then declining for the next 30 years. During the 1990s, the improvement in the national economy and lifestyle changes as well as an increase in migration from other islands stemmed this decline and there was modest growth from 46,901 in 1990 to 49,031 in 2000. This is in stark contrast to figure of 37,074 for 2011, representing a decrease of 24.3%. This translates into a reduction in population density for Port of Spain from 4,086 persons per km^2 in 2000 to 3,090 persons per km^2 in 2011. Based on this data[31] Port of Spain remains the most densely populated administrative area in the country.

In keeping with the trend of population decline, the Port of Spain metropolitan area (comprising the administrative areas of Port of Spain, Diego Martin and San Juan/ Laventille) showed an absolute decline of just under 15,000 persons over the period 2000 to 2011.

Development Considerations

As the administrative and financial capital of the nation, Port of Spain offers the highest levels of commercial, service and administrative functions. It is a major shopping destination, employing a large proportion of the population in its retail sector, as well as a major centre of business, entertainment, culture and learning, attracting large numbers of daily commuters.

The combination of mountain range and deep valleys to the north and the sea to the south provides the City of Port of Spain and the immediately adjoining areas with a dramatic and intrinsically beautiful setting. Complemented by an increasingly cosmopolitan downtown area and water-front; surrounding inner urban quarters with strong and vibrant identities of their own; major amenities of national significance such as The Queen's Park Oval cricket ground, the National Library, the Queen's Park Savannah, the Emperor Valley Zoo and the Botanical Gardens, and the National Academy for the Performing Arts; academic institutions; the deep cultural and historic heritage embedded in areas like Laventille and Belmont; the National Parliament and official residences of the President and the Prime Minister; and a vibrant cultural and commercial presence, Port of Spain has many of the makings of a 'world class' city. At the same time, this is a complex urban area that faces significant problems relating to poverty, social stress, criminal behaviour, traffic congestion, pollution and infrastructure inadequacies.

Although there have often been calls to reduce Port of Spain's dominant national role as part of efforts to balance regional development, there is also a case for maximising the Port of Spain's role as a city with international presence, bringing benefits to the nation as a whole. Participation in initiatives such as the Inter-American Development Bank (IDB) funded 'Emerging Sustainable Cities' project is important in this context.

The port activities are important to both the local and regional economy with linkages throughout the Caribbean. The typical associated downstream industries and activities have contributed to the growth and development of the City.

Diego Martin is an expansive administrative district. The urban area consists of a series of relatively densely settled north-south valleys; hillside development on the western periphery of the City of Port of Spain; coastal settlement along its southern edge; and low density rural settlement on the north coast. The character of the area is predominantly sub-urban and it functions largely as a suburb of Port of Spain.

The areas east and north of the City fall within the San Juan/Laventille area. As with Diego Martin, these areas include a range of settlement types, ranging from the relatively upscale areas of St Ann's and Cascade, through Belmont, with signs of urban decay, to the low income and deprived communities of East Port of Spain.

The oil boom in the 1980s sparked urban population growth, which in turn led to growth of informal settlements, located largely on the fringes of the City. These areas display issues typically associated with unplanned growth,

[31] 2011 Population and Housing Census, Demographic Report, CSO, Ministry of Planning and Sustainable Development

including poor physical, social and economic infrastructure.
East Port of Spain exhibits a number of these deficiencies and is recognised as a longstanding deprived area. It is also acknowledged as the heart and home of traditional Carnival and steel pan culture, and features a number of important historical sites. The development potential of the area as well as the extent of deprivation has prompted its identification as a Growth Pole, with a focus on "construction, creative industries, music and entertainment, tourism and small business development."

The Invaders Bay area also falls within this Sub-Region. This area is identified for growth in the MTPF as a "significant urban development project."

Whilst the Sub-Region is dominated by built development, it includes sensitive environmental areas, particularly the Caroni Swamp. Protected under the Ramsar Convention, this is one of the largest mangrove wetlands nationally and is home to the distinctive national bird of Trinidad, the Scarlet Ibis. Other significant areas include the Northern Range hillsides and valleys, the integrity of which continues to be threatened by built development.

East/West Corridor Sub-Region

Population characteristics and trends

Over the period 2000 to 2011, the population of the Tunapuna-Arima area showed an increase of just over 12,000 persons or some 5.3% overall. This corresponds to increases in density for Arima Borough from 2,690 persons per km^2 in 2000 to 2,801 persons per km^2 in 2011, and 400 persons per km^2 to 422 persons per km^2 for the whole Tunapuna/Piarco area for the same period.

Development Considerations

This Sub-Region extends from Tunapuna in the west to Arima in the east, and falls within the Tunapuna/Piarco Regional and Arima Borough Corporations. A continuation of the corridor of development stretching from Port of Spain in the west, the density of development tends to decrease eastwards.

The Tunapuna/Piarco area has experienced significant growth in population, business and commerce over the last two decades, most of this concentrated along the East/West Corridor. This has put strain on the physical and social infrastructure, evidenced by problems ranging from a lack of potable water supply in some areas, lack of wastewater treatment infrastructure, flooding, partially caused by indiscriminate cutting on the hillsides for development purposes, and traffic congestion.

The eastern portion of the Sub-Region features an education and knowledge based cluster around the UWI Campus at St. Augustine, alongside a medical cluster. Lands south of the Churchill Roosevelt Highway include large expanses of good quality agricultural land. The Piarco International Airport is located south of the Highway, whilst the Trincity Millennium Vision Development lies north of the Highway. Trincity has developed as a new centre and benefits from being conceptualised as an integrated mixed-use development, with available land for planned expansion.

Further east, the relatively densely developed and populated urban centre of Arima performs an important role as a regional service centre in north east Trinidad. It is well located on the national highway grid and enjoys close proximity to the airport as well as the Northern Range and north and east coast areas. It provides a number of high-level services, including a UTT Campus and a vibrant industrial estate at O'Meara. Arima itself has rich historic and cultural resources, which complement the natural resource base of its rural outskirts. There is potential for development of nature and cultural tourism.

The Tamana InTech Park at Wallerfield lies at the eastern edge of the Sub-Region. This has previously been identified as a growth area based firstly on development focused around the former airbase at Wallerfield, which is being developed as a centre of ICT and light industry. There is additionally the potential to develop a centre of excellence in energy technology. Incorporation of such developments within a new town has been previously considered and is flagged for re-evaluation upon Strategy review.

Regional Guidance

The important role and function of Port of Spain as the capital city should be recognised in promoting its sustainable development. This will entail urban containment to prevent further inefficient sprawl (particularly in unsuitable and unsustainable locations, especially hillsides on the urban fringe, sensitive environmental areas and agricultural lands), coupled with promoting more efficient use of land within the existing built-up areas. There is a need for higher densities where appropriate, coupled with improved urban design to produce higher quality, more efficient urban quarters.

The role, function and identity of other urban centres - "urban villages" - within the IPR should be strengthened, realising their potential to act as attractors and service providers to local communities, facilitating reduced travel distances and modal shift and reducing pressure on Port of Spain. In that context, the local service functions of Port of Spain and its component neighbourhoods, San Juan, Barataria, Diego Martin, Carenage, Tunapuna, St Augustine, El Dorado, Arouca, Trincity, Curepe and Arima should be enhanced and consolidated.

Transport arrangements and infrastructure across the IPR should be reviewed in the context of a Sustainable Transport Strategy, with a view to promoting a shift from car dependency towards greater use of

public transport and making it more attractive to walk or cycle for shorter journeys. This needs to influence improvements to the form and fabric of urban places and strengthen public transport links between them and with centres outside the IPR. The potential of the Priority Bus Route should be fully realised as a crucial component of sustainable transport and the form of public transport provision should be reviewed accordingly.

East Port of Spain's unique identity and community strengths should be supported by promoting construction, creative industries, music and entertainment, tourism and small business development - a strong cultural and creative cluster. This must link effectively with on-going participation in the IDB led Emerging Sustainable Cities Project focusing on environment and infrastructure, cultural heritage restoration and social and economic development.

To reduce traffic congestion and promote urban regeneration opportunities, the potential for rationalisation and possible relocation of some of Port of Spain's port activities should be pursued further, as should the potential for major urban development, mixing residential, retail and recreational functions at Invaders Bay.

Landscape and habitat management measures should be taken forward to protect and enhance key natural assets including the Caroni Swamp and the Northern Range. Further hillside development should be restricted.

Throughout the IPR, innovative urban/ sub-urban agricultural developments should be explored and supported to increase urban self-sufficiency and produce other environmental and social benefits.

A sequential approach should be taken to selection and development of sites, maximising redevelopment and densification opportunities. Higher density and mixed-use developments should be closely aligned to transport corridors and nodes within the linear urban areas.

The development and expansion of an education and knowledge-based cluster - an Education City – together with supporting residential and service uses around St. Augustine and Tunapuna, and similarly for an expanded medical cluster at St Augustine are consistent with the special area growth centre policies of the NSDS.

Provision should also be made for:

- industrial and business park development clusters around Trincity, well related to housing development and ancillary services and facilities, and in the vicinity of Piarco International Airport; and,
- development and expansion of an ICT and light industry cluster and centre of excellence for energy technologies at Wallerfield, with longer term potential of area for strategic settlement growth highlighted for future review and evaluation.

Across the IPR, infrastructure improvements should be pursued systematically and as opportunities arise. These should include upgrading and improving provision of and access to social and physical infrastructure.

REGIONAL PLANNING GUIDANCE FOR PORT OF SPAIN AND THE CAPITAL REGION

Planning Authorities should adopt integrated approaches to improve the environmental quality and functional efficiency of urban centres and 'urban villages' throughout the IPR, closely coupled with development and implementation of a regional Sustainable Transport Strategy, to reduce congestion, inefficiency and pollution and improve regional productivity and quality of life.

Further expansion of urban areas should be restrained and emphasis should be placed on densification in appropriate locations, improved urban design and quality of place, and provision of adequate physical and social infrastructure.

Provision should be made for further development of the industries, technologies, education and research institutions, commercial and service facilities and airport-related facilities, with opportunities to create productive clusters being identified and promoted. Port rationalisation options should be considered. Appropriately located and designed development should be supported and encouraged provided it will be in harmony with natural environmental processes and will not have adverse impacts on local communities.

Coordinated actions should be taken to realise the potential for Port of Spain and the Capital Region to develop as a sustainable 'world city', contributing to a high and sustainable quality of life for citizens across Trinidad and Tobago.

6.7 Central Trinidad

Central Trinidad IPR

- Landscape management zone
- Protected areas
- Urban centres
- Major urban clusters
- Growth Pole (as defined in the MTPF)
- Strategic Development Project (as defined in the MTPF)
- Tourism focus
- Port and related industry
- Maritime services / industry
- Potential for port to be explored
- Improved communication links
- Renewable energy potential
- International airport
- Dam / Resevoir
- Integrated Planning Region boundary

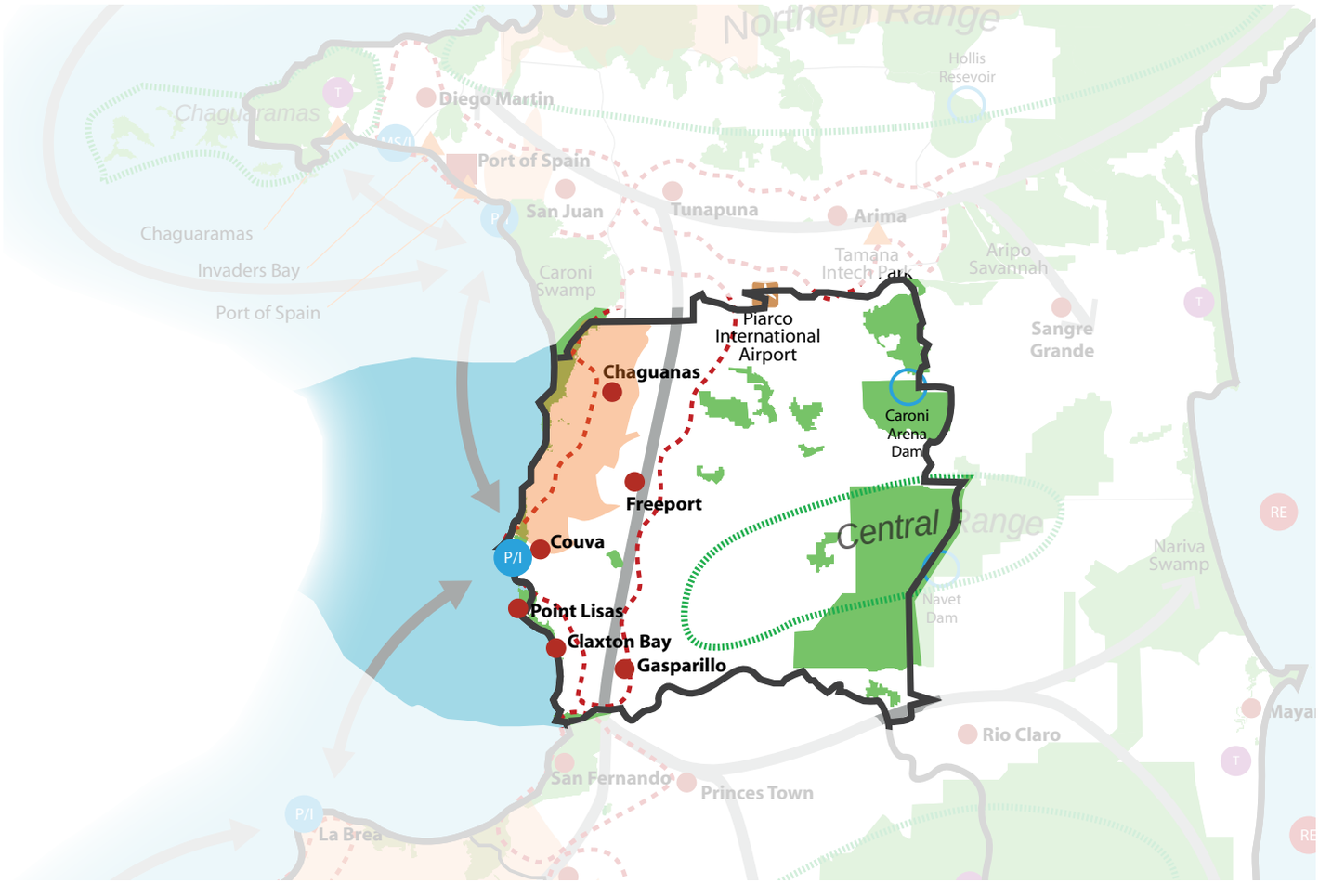


Figure 19: Central Trinidad IPR

REGIONAL PLANNING GUIDANCE FOR CENTRAL TRINIDAD

Planning Authorities should work collaboratively to promote development in the Central Trinidad IPR which generates environmental, economic and social benefits of both local and national significance by:

- protecting and enhancing the landscape, natural and cultural assets of the area, including the Montserrat Hills and activity in areas impacting on the Caroni Swamp;
- developing tourism potential both for local communities and for visitors; and
- making provision for the appropriate development and protection of agricultural lands, including those relating to the mega farms initiative and the revival of the cocoa industry.

Planning Authorities should adopt integrated approaches to improve the environmental quality and functional efficiency of urban centres and urban areas throughout the IPR so as to reduce congestion and pollution and improve regional productivity and the quality of life. Further expansion of urban development should be restrained, especially where this would take productive / potentially productive agricultural land or impact on ecological and landscape resources. However land for the expansion of Couva should be identified subject to the sequential approach advocated in Policy 2.

Provision should be made for further development of port facilities, light industries, energy and service industries, creative industries and agriculture. Appropriately located and designed development should be supported and encouraged provided it will be in harmony with natural environmental processes and will not have adverse impacts on local communities.

The roles and functions of Chaguanas, Couva, Point Lisas, Gasparillo and Freeport should be consolidated to ensure that the viability of the service offer is maintained with residents able to sufficiently access facilities that serve their day-to-day needs.

The development potential of Charlieville and Carapichaima as part of the Growth Pole should be explored.

Governance

This IPR is administered by the Borough of Chaguanas and the Couva/Tabaquite/Talparo Regional Corporation.

Description

Central Trinidad comprises the areas administered by the Borough of Chaguanas and the Couva/Tabaquite/Talparo Regional Corporation. These are economically dynamic areas whilst at the same time subject to a range of challenges given their diversity. As such, they are together identified as the Central Trinidad IPR.

Population characteristics and trends

Central Trinidad comprises the fastest growing area of the nation. Between 2000 and 2011, the population of the Borough of Chaguanas increased by 23.8%, whilst that of Couva/Tabaquite/Talparo increased by 9.6% . In absolute terms, this accounts for approximately 48.3% of the overall national population growth for the same period.

The population increase in Chaguanas is reflected in an increase in density from 1,143 persons per km^2 in 2000 to 1,416 persons per km^2 in 2011. For Couva/Tabaquite/Talparo, the comparison is a density of 225 persons per km^2 in 2000 rising to 247 persons per km^2 in 2011.

The population of Chaguanas is substantial with its population in 2011 of 83,516 far exceeding the projection to 2020 of 75,687, based on the 2000 Census. Whilst growth in the Couva/Tabaquite/Talparo area has not matched that of Chaguanas, continuation of its growth to 178,410 persons in 2011 will exceed its projected population in 2020 of 190,000. Continued population growth is anticipated and should be kept under close review.

Development Considerations

Central Trinidad is a varied area with extensive land resources, a diverse and scenic landscape, historical and cultural sites, and numerous cultural events and celebrations. The eastern sector, including the scenic Montserrat Hills, is more rural, with numerous villages and a landscape characterised by agricultural and forestry activities. In contrast, heavy industrial and urban development dominates much of the coast and western portion of the IPR, with Point Lisas being the country's second major port and containing its largest industrial zone.

Rural village settlements in the east mainly take the form of ribbon development. In the west, the tendency is towards larger urban centres, forming parts of a North/South Urban Corridor that runs through the IPR and towards San Fernando alongside the Southern Main Road, Uriah Butler and Sir Solomon Hochoy Highways. Couva was previously identified as a main growth centre but its potential has been largely eclipsed by that of Chaguanas, which functions as the main regional service centre and has undergone unprecedented growth in the last decade. This has not been matched by provision of infrastructure and reorganisation of space and as a result, Chaguanas and some other centres continue to experience significant urban development dis-function. These are likely to intensify as development associated with the proposed relocation of government offices and institutions from Port of Spain takes place.

Historically, the economy was agriculturally based and to a large extent dependent on the production of sugarcane for its growth and development. With the closure of state owned Caroni (1975) Limited, there has been a significant decline in sugar production. With its estate totalling approximately 78,000 acres, this had several implications that need to be considered in planning for future development:

- with the major decline in sugarcane production there remains both a need and an opportunity to diversify the agricultural sector and make productive use of the extensive acreages of abandoned sugarcane lands;
- arrangements were made to allocate a large part of the former Caroni (1975) Ltd estate to former employees in two acre lots on which to farm and live and,
- a number of former Caroni buildings have been converted into other commercial and industrial uses.

Regional Guidance

Central Trinidad has emerged as a nationally significant growth engine. Its growth potential should be harnessed and maximised more coherently and efficiently, promoting more sustainable use of land within existing built-up areas and restricting further urban expansion, especially on to productive and potentially productive agricultural land.

Key centres including Chaguanas, Couva, Point Lisas, Gasparillo and Freeport should be consolidated, addressing infrastructure and urban environmental issues and enabling their development as social and economic focal points within a more sustainable urban cluster pattern. Higher density mixed-use developments should be promoted close to transport corridors and nodes in the existing built up areas.

Couva, Chaguanas, Carapichaima and Charlieville have been identified as a Growth Pole, focusing on "light industrial development, service industries and creative industries". Associated development and infrastructure requirements need to be planned and provided for in accordance with the objectives of this Strategy.

Potential for expansion of the Port of Point Lisas to take advantage of changes in the maritime and shipping sectors (including opportunities arising from the widening of the Panama Canal) should be explored and provided for. This should include developments that would facilitate rationalisation of port and maritime facilities in Port of Spain.

Transport arrangements and infrastructure across the IPR should be reviewed in the context of an Integrated Transport Strategy, with a view to promoting a shift from car dependency towards greater use of public transport and making it more attractive to walk or cycle for shorter journeys. This should be linked to improvements in the form and fabric of the urban places and strengthening of public transport links between them with centres outside the IPR (for example by developing a dedicated public transport route through the North-South Corridor). The potential for further water-based transport in the Gulf of Paria should be explored, for movement of both people and goods.

Initiatives to support and rejuvenate agriculture should be facilitated by spatial planning decisions, which should provide for expansion of agriculture and ancillary services, particularly in the east, and support initiatives such as development and expansion of food processing facilities including the potential revival of the cocoa and coffee industries. Careful consideration should be given to the future of the former Caroni lands, having particular regard to the twin needs of promoting agriculture and ensuring that residential and urban development patterns are efficient, sustainable and not prone to sprawl.

Protection of environmental assets, conservation of the natural environment and landscape management should be afforded high priority. Activities impacting on the Caroni Swamp require particularly careful consideration to ensure that harmful impacts are avoided.

Features that will attract visitors and support a sustainable tourism industry should be safeguarded and enhanced, including, for example, the temples in Carapichaima/Waterloo; the mud volcanoes at Piparo; cocoa estates in Gran Couva and the landscape of the Montserrat Hills.

6.8 San Fernando and the South

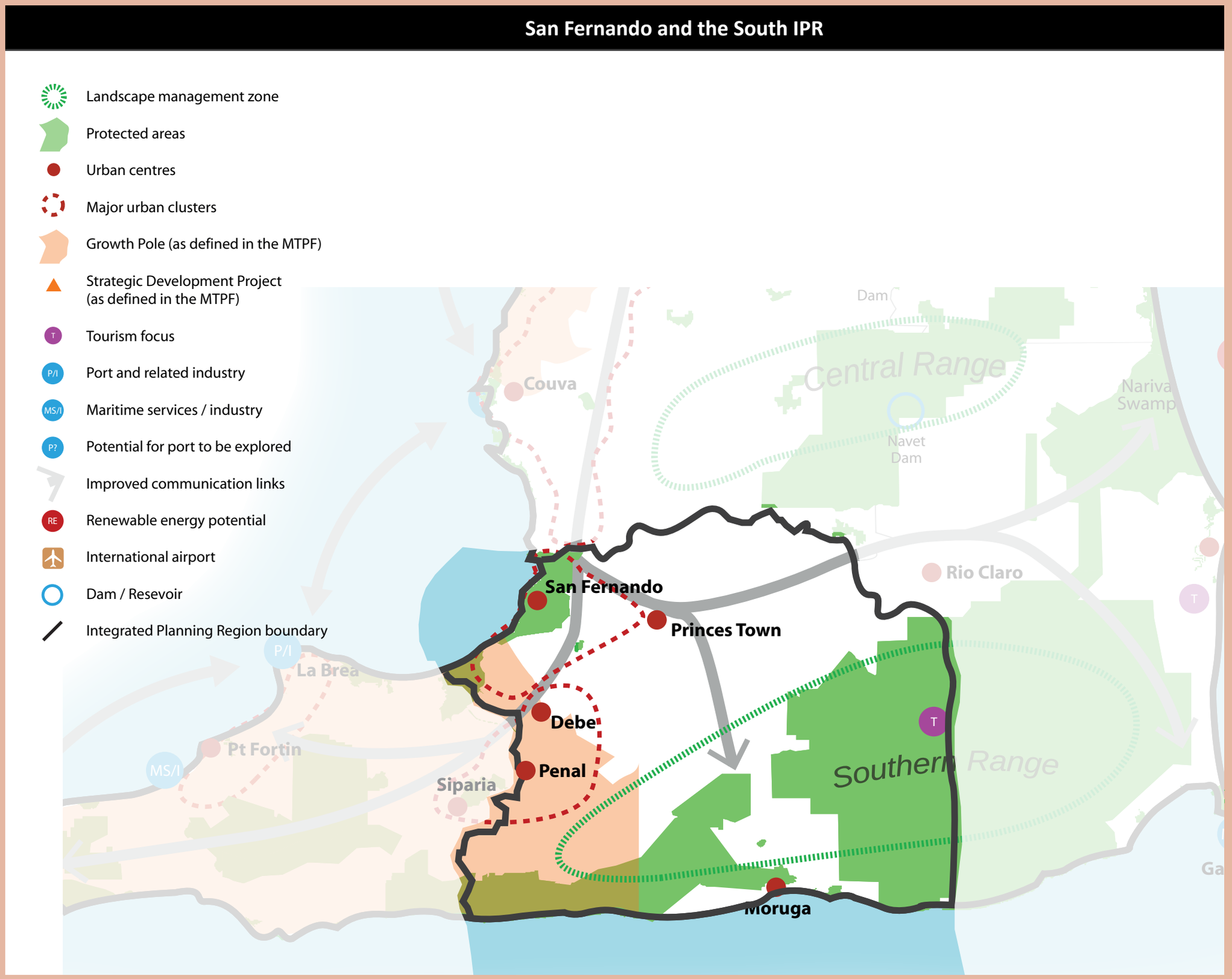


Figure 20: San Fernando and the South IPR

Governance

This IPR comprises the City of San Fernando and the Penal/ Debe and Princes Town Regional Corporations.

Description

This IPR spans the southern capital of San Fernando together with the administrative areas of Penal/Debe and Princes Town. Whilst Penal/Debe and Princes Town comprise fairly sizeable and diverse administrative areas compared with the predominantly urban character of San Fernando, the areas have been combined into one IPR on the basis of similar urban characteristics and functions.

Population characteristics and trends

The population of the City of San Fernando fell by 11.9% or some 6,581 persons between 2000 and 2011. Population density for the same period fell from 2,917 to 2,570 persons per km^2. In contrast, the populations of both Penal/Debe and Princes Town grew by 6.9% and 11.3% respectively over the same period. Within the context of larger land areas however, the density of Penal/Debe increased from 340 to 363 persons per km^2, with that of Princes Town increasing from 148 to 165 persons per km^2.

Development considerations

With a 'city proper' population larger than that of the City of Port of Spain, San Fernando is regarded as Trinidad's second city, and the industrial capital of the nation. This is as a result of the proximity to oil and natural gas operations, which have generated a significant amount of economic activity and income within the area.

San Fernando functions as the main transportation hub and predominant urban centre in south Trinidad. It is significant as a key metropolitan district after the national capital, and accommodates a concentration of urban amenities, employment opportunities and a high level of social services, all within a distinctive urban setting. There are many lower level government and administrative offices in addition to a thriving commercial city centre. However, as commercial land uses continue to encroach upon the existing residential areas, the character of the City continues to change and residents are affected by inadequate community services. San Fernando also possesses a number of vacant lots, which represent valuable redevelopment opportunities. In addition, the Waterfront area has long been neglected and its potential under-utilised, although this is currently the subject of overdue redevelopment strategies.

The administrative areas of Penal/Debe and Princes Town share a number of characteristics including abundant natural resources and a rich, diverse history and culture which can be harnessed for eco-tourism. The regional towns have bustling commercial and institutional centres, and the potential to revive its relatively dormant agricultural sector, provided vibrant agricultural and other resource-based industries can be re-established. The areas also face a number of common challenges including extensive ribbon development, infrastructure deficiencies, and squatter settlements.

The western part of the Penal/Debe Regional Corporation area lies within the South Western Peninsula Growth Pole. The priorities for this include "port development, fishing industry, manufacturing, support services and agriculture."

Regional Guidance

Provision should be made for revitalisation of resource-based industries within the IPR.

San Fernando's role as the main centre for south Trinidad should be strengthened through sustainable development. The decline in population experienced in recent decades should be reversed by facilitating appropriate redevelopment and promoting significant enhancements to the quality of the urban environment. Key projects include implementation of the San Fernando Waterfront Development Project; upgrading and enhancing the City Centre's environment and making it more pedestrian friendly; and rejuvenating Harris Promenade.

In San Fernando and the IPR's other centres, urban containment to prevent further sprawl (on the urban fringe and into sensitive environmental areas and agricultural lands) should be coupled with promotion of more efficient use of land within existing built-up areas through higher density and enhanced urban design.

The roles, functions and capacities of San Fernando, Penal, Debe and Princes Town should be enhanced and consolidated in order to maximise their potential as attractors and service providers. The potential for ancillary development around the UWI South Campus at Debe should be proactively planned for.

A sequential approach should be adopted when selecting and developing sites, maximising redevelopment and densification opportunities within existing urban areas; promoting higher density and mixed-use developments close to transport corridors and nodes in built up areas; restricting outward urban expansion; and avoiding further ribbon development.

REGIONAL PLANNING GUIDANCE FOR SAN FERNANDO AND THE SOUTH

Planning Authorities should adopt integrated approaches to improve the environmental quality and functional efficiency of San Fernando and the IPR's other urban centres and areas so as to reduce congestion and pollution and improve regional productivity and quality of life. Further expansion of urban development should be restrained, especially where this would take productive / potentially productive agricultural land or impact on ecological and landscape resources.

Provision should be made for further development of resource-based industries, service industries, and energy technology expertise. Appropriately located and designed development should be supported and encouraged provided it will be in harmony with natural environmental processes and will not have adverse impacts on local communities.

The roles and functions of San Fernando, Penal, Debe and Princes Town should be enhanced to ensure that the viability of the service offer is improved with residents able to access facilities that serve their day-to-day needs.

Measures to reduce traffic congestion in San Fernando and other centres should be developed in the context of a sustainable transport strategy for the IPR, with the objective of promoting a shift from car dependency towards greater use of public transport and making walking or cycling more attractive for shorter journeys. This should be linked to improvements to the form and fabric of urban places and strengthening of public transport links between them and with centres outside the IPR. Potential for further development of the water taxi service together with improving other forms of public transport should be explored.

When planning for further development, account should be taken of the need to safeguard productive and potentially productive agricultural land; conservation the natural environment and ecosystems; and protect and manage distinctive landscapes and townscapes including the San Fernando Hill.

6.7 South West Peninsula

South-West Peninsula

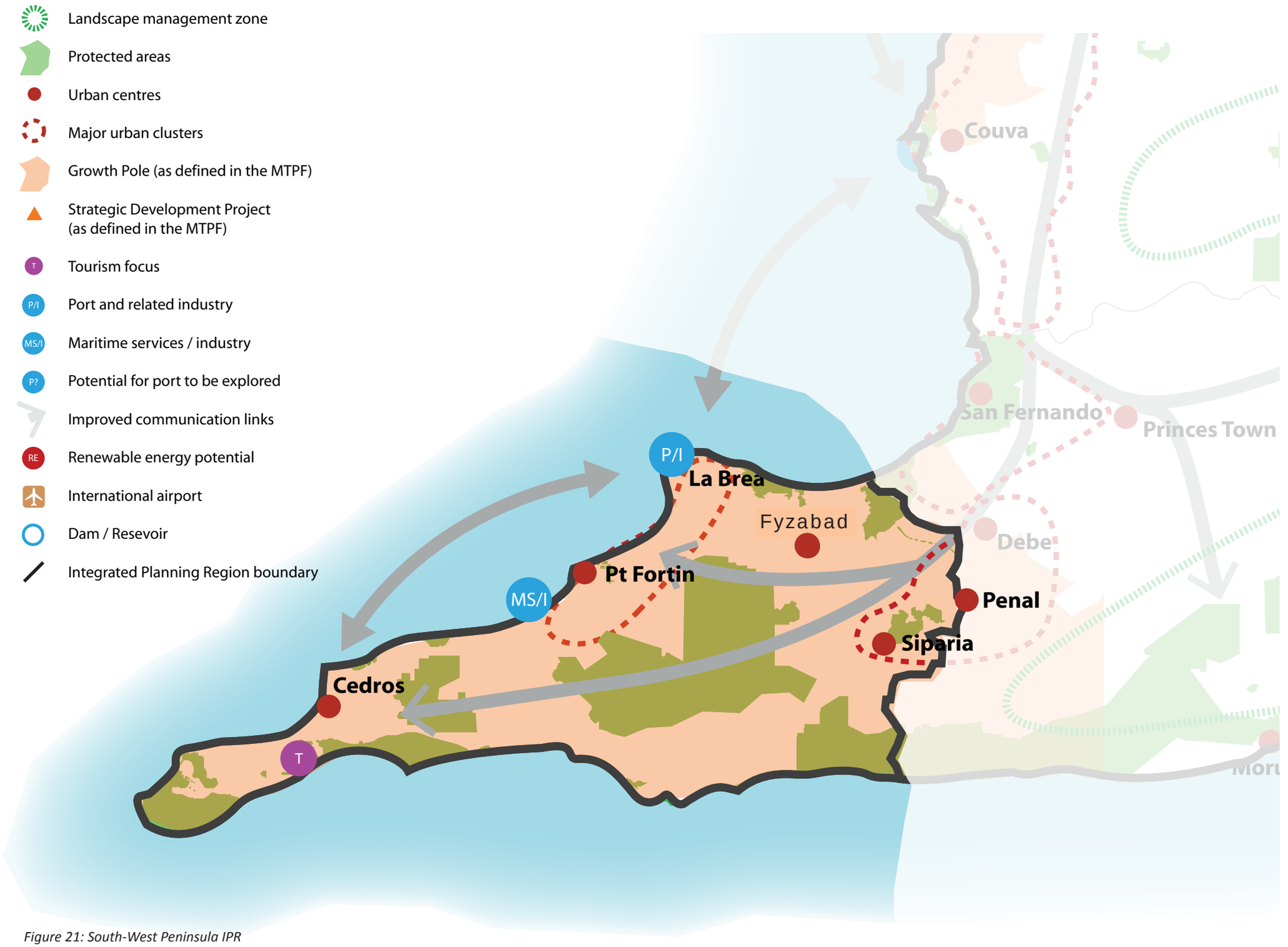


Figure 21: South-West Peninsula IPR

Governance

This IPR is administered by the Borough of Point Fortin and Siparia Regional Corporation.

Description

The South-West Peninsula is a relatively remote part of Trinidad with a distinctive landscape and culture. It extends from the towns of Siparia and La Brea in the north and east through to the fishing communities of the Cedros Peninsula. The area is rich in natural resources yet lags behind most of the country in economic terms. Given these commonalities, it has been identified as the South-West Peninsula IPR for the purposes of the NSDS.

Population characteristics and trends

Growth in population for the municipal areas of both Point Fortin and Siparia over the period 2000 to 2011 has been slow but steady at 6.2% and 6.1% respectively; slightly more than the overall national increase of 5.2% for the same period. Over the same period, the population density in Point Fortin increased from 762 to 809 persons per km^2. Given the extensive land area of the Siparia municipality however, population density remains relatively low at 176 persons per km^2 in 2011.

Development considerations

Point Fortin is one of the smallest municipalities in Trinidad in terms of land area. Its development pattern is characterised by the concentration of commercial and institutional activities in its central core, with residential development in outlying communities, energy based industrial activity in the coastal area and open lands throughout the rest of the area frequently dotted by oil mining installations.

The Siparia sub-region similarly features a mixture of land uses including settlements of various sizes, onshore areas for oil production, ports and industrial areas, fishing centres, forests, swamps, agriculture and numerous beaches.

The economy of this IPR had been based heavily on the land-based energy industry – oil reserves and the famous Pitch Lake asphalt resource near La Brea. However, with the shift in focus to off shore and the related decline in the onshore energy sector, the area went into decline. Coconut plantations and other agriculture and fishing further provide the economic base further south, but this is a vulnerable and often fragile economy.

Whilst the IPR is considered to have development potential for industry and other resource based activities, it has for the most part been unable to harness this potential and as such remains a lagging region in many respects. Accessibility is a key issue as in the national context, this is a remote region. This is being addressed via the construction of the San Fernando to Point Fortin Highway, but other measures need to be considered as part of the Sustainable Transport Strategy.

The MTPF identifies the South Western Peninsula as a Growth Pole.

Regional Guidance

The environmental qualities and resources of this IPR warrant protection and enhancement. This must be balanced against its economic and social needs as a lagging region. The whole South Western Peninsula has been identified as a Growth Pole focusing on "port development, energy services, the fishing industry, manufacturing, support services and agriculture." In this context, expansion of existing clusters and development of new areas should be facilitated, together with consolidation and managed growth of strategic settlements to support intended economic growth.

Support for economic development should focus on expansion of existing industrial developments and development of downstream industry and ancillary services. Consideration should be given to initiatives such as the establishment of an energy cluster at Labidco Estate, La Brea (focused on renewable energy) and development of port and maritime service and maintenance facilities at La Brea. Port facilities here could, for example, link with extended water taxi services to improve accessibility to the area and through to the Cedros Peninsula, potentially increasing tourism potential.

The roles and environments of Point Fortin as industrial town, and Siparia as a regional town providing administrative and commercial facilities, should be enhanced. In particular, provision should be made for better health facilities in the administrative area of Siparia. La Brea and Fyzabad should also be consolidated and enhanced as opportunities arise.

In the rural communities development should be in keeping with rural character and limited mostly to infill within existing settlements to sustain resident populations. Further ribbon development should not normally be allowed and agricultural land should be safeguarded. Provision should be made for development and expansion of food processing facilities and facilities to support the local fishing industry.

REGIONAL PLANNING GUIDANCE FOR THE SOUTH-WEST PENINSULA

Planning Authorities should adopt integrated approaches to improve the environmental quality and functional efficiency of towns and villages and quality of life. Further expansion of settlements should be planned and should allow for local development needs, avoiding taking productive/potentially productive agricultural land or impacting on ecological and landscape resources.

Provision should be made for further development of the resource and energy -based industries, maritime service industries, and agriculture and fisheries. Appropriately located and designed development should be supported and encouraged provided it will be in harmony with natural environmental processes and will not have adverse impacts on local communities.

The roles and functions of Siparia, La Brea, Fyzabad and Point Fortin should be enhanced to ensure that the viability of the service offer is improved with residents able to access facilities that serve their day-to-day needs.

A careful balance must be achieved between development and environmental conservation and management. Integrated coastal management and enhancement are important here, especially as parts of this IPR are prone to erosion and are likely to be affected by rising sea levels.

Landscape management is also important in this region with considerable potential for community-based tourism if accessibility issues can be overcome.

Social infrastructure should be improved, particularly in peripheral areas and investment in enhanced ICT infrastructure should be prioritised to improve levels of connectivity and communication.

7. IMPLEMENTATION, MONITORING & REVIEW

7.1 Implementing the National Spatial Development Strategy

Implementation actions have been listed in relation to each of the Core Development Policies in Chapter 5. A full list is presented in Table 3 to help identify actions that will contribute towards implementation of multiple policies. These should be regarded as the starting point for actions that are necessary and the organisations that should to be involved. Beyond this, an effective and detailed Implementation Plan must be devised, agreed, monitored and reviewed as the NSDS is pursued. This will require careful and structured consideration of the Strategy by the large number of organisations and individuals on whose decisions and actions delivery of the changes the NSDS seeks to bring about will depend. This Chapter outlines the approach and the process proposed.

'Stakeholder' is the term most frequently used to refer to organisations and people in this context. The Oxford English Dictionary defines a stakeholder as "a person with an interest or concern in something". Everyone is a stakeholder in the nation's well-being; hence everyone has a part to play in implementing this Strategy.

Figure 22: Stakeholder types

Whilst sharing certain common objectives, different stakeholder groups and individuals will have differing expectations and aspirations, outlooks and roles to play. In seeking to understand the different groups, it is helpful to group stakeholders into three broad categories. The first two are 'Active' and 'Passive'. In simple terms, Active stakeholders initiate changes, whilst Passive stakeholders experience the effects of those changes without being actively involved in making them happen. The third category of stakeholder is 'Reactive'. Passive stakeholders may for example become Reactive stakeholders when faced with proposed changes that they either may not want or understand. At any given time, any individual or organisations may simultaneously be an Active, Passive and Reactive stakeholder in relation to different issues, and roles may change over time.

Stakeholders should be involved in the preparation of process strategies and plans because they will be affected by them and effective implementation will depend on their decisions and actions. Stakeholders must also be involved in first formulating and then actively pursuing an effective Implementation Plan, and this will be an ongoing and iterative process.

Some of the changes advocated in the NSDS will involve new ways of doing things. As such, capacity building to undertake the new tasks will be necessary. This relates to the importance of stakeholder involvement in implementing the NSDS. For this to be effective, stakeholders need to understand not only the issues and intentions, but also to appreciate the process and how it can be effectively engaged with. This will require ongoing and targeted public and organisational education programmes as part of wider capacity building initiatives for all stakeholders with the objective of facilitating more effective and holistic participation in the implementation process.

Stakeholder consultation was undertaken as the draft NSDS was being prepared and the responses received at that time have influenced the Strategy. Reports of the stakeholder consultation workshops conducted during November and December 2012 are available. Further public consultations were undertaken in April and May 2013 after the preparation of the initial draft series of NSDS documents with a view to ensuring that as wide a participation and refinement was achieved in the final product. A comprehensive report on these public consultations will also be prepared and disseminated.

Information Box 14 outlines some of the key stakeholder groups that need to be closely involved in planning and pursuing the implementation of the NSDS.

Information Box 14
Key Stakeholder Groups

- National Planning Authority;
- THA and Municipal Planning Authorities that is Planning Authorities;
- Private sector developers and investors;
- Other Ministries and Service and Infrastructure Agencies (WASA, EMA, HDC, LSA etc.);
- Inward investors;
- People, Communities and Civil society groups.

Actions required to implement the NSDS	Policy number
Cooperation and collaboration between Planning Authorities, Government/Ministries and other public bodies	1; 2; 5; 7; 8; 9; 13; 15; 16; 18; 19; 23; 24
Further policy development and allocation/safeguarding of sites in within SDPs	1; 4; 5; 11A; 11B; 18
Development Management process and decisions	1; 2; 3; 4; 5; 7; 8; 11A; 11B; 12; 13; 14; 15; 17; 19; 20; 21; 22; 23; 24
Policy enforcement	3; 15; 16; 18
Review of design standards and criteria;	4; 8
Establishing Design Review Panels	4; 14
Collaboration and cooperation between design, engineering, and planning professionals	4
Data collection dissemination, and monitoring	5; 7; 8; 9; 13; 16; 18; 19; 20; 24
Preparation and adoption of Community Involvement protocols by Planning Authorities	6
Measures to increase the availability and quality of human and material resources to facilitate the required supply of housing	7
Availability of an adequate pool of design professionals	7
Adoption of appropriate and consistent policy for the management of state land	8
Review of the Squatter Regularisation Programme	8
Legislative reviews	15; 18; 23
Completion of the National Inventories Project	9; 10
Adoption of Cultural Policy	9; 10
Establishing a system of Protected Areas	10
The delivery of schemes identified within the MTPF	11A; 11B;
A National Water Resource Management Strategy	12
Review of the Agriculture Land Capability Classification	12
Improvement of land management and tenure for farmers	12
Initiation of an agriculture labour programme	12
Skills and training in various fishery related activities	12
Preparation of Landscape Character Assessments	14
Investment in the programmes identified in the National ICT Plan	22
A preparation of the National Integrated Water Resource Plan	15
The preparation of an Integrated Coastal Zone Management Plan	15; 16; 19
National Irrigation Plan	15
Institutional capacity building	15; 16; 18; 19
Adoption of Air Pollution Rules	17
Public education programmes	3; 12; 23; 24
Strategic Environmental Assessment	18
Implementation of the National Spatial Infrastructure and the Single Electronic Window projects	22
Establishing a National Transport Authority and perparation of a Sustainable Transport Strategy	21
Review of petroleum and electricity costs	23
Preparation and implementaion of a National Waste Management Plan	23
Implementing the Beverage Recycling Bill	23
Developing and implementing a Sustainable Transport Strategy	23
Fiscal support for capital costs associated with renewable energy infrastructure	23
Development of operational and environmental performance standards for waste management	24

Table 3: Implementation actions

As set out in Chapter 1, the NSDS is intended to cover the ten year period from 2013 to 2023, working towards a vision of desired progress that can be achieved by 2033. Achievement of this vision and the changes set out in this document will require policies and actions being consistently pursued over long periods of time. This will require institutional and administrative continuity, as well as consistency in application of the Core Development Policies and Regional Guidance contained in the NSDS, as modified and updated by periodic review undertaken in accordance with the legislative requirements for doing so.

7.2 Change and Intervention

Change is normal and it happens with or without planning. Planning is about managing change. The fundamental purpose of the spatial planning system is to intervene, where necessary, to steer the processes of change in one direction rather than another, with the overarching aim of maximising benefits and minimising harm. The benchmark for judging between beneficial changes and harmful changes is 'the public interest.' The question to be asked in each case is a simple one:

"Is this change in the best interests of the public - the people as a whole – now and in the future?"

Market forces are strong drivers of change. Whilst this is often beneficial, market forces may result in decisions being taken on the basis of short-term considerations alone rather than a longer-term view. When this happens, market forces can act to suppress changes that may be in the wider or longer-term public interest. It is this type of 'market failure' that requires intervention in order to achieve sustainable development.

The spatial planning system's main role is to ensure that changes that are in the public interest happen and changes that are against the public interest do not happen.

The NSDS's Vision and Objectives are most likely to be achieved by pursuing a Sustainability-led Approach to intervention, which:

- integrates planning, investment and development decisions, seeking to coordinate the actions of all government agencies, the private sector and the people, with a prime imperative of enhancing economic and social well-being, and maintaining the ecosystems which provide life-supporting services; and,
- recognises the influences of market forces and supports the crucial roles played by the private sector, whilst intervening consistently and strongly as necessary to promote and safeguard the public interest.

The Sustainability-led Approach seeks to enable market forces to function in the public interest, based on effective partnership between all sectors in society – business, government, and communities. It requires government to lead, but not dominate the processes of change which, to be effective and sustainable, needs to be supported and implemented in large part by the business and community sectors, as well as individuals in choosing between alternative courses of action. Intervention must be consistent and positive, seeking to further the wider public interest by maintaining a long-term perspective.

7.3 Developing Implementation Plans: Working Together to Achieve the Vision

The NSDS provides both the framework for detailed SDPs at the regional and local levels, and a reference point for the spatial aspects of government policies. It provides central and local government bodies with the roadmap to navigate towards a specific vision and aims and objectives, whilst seeking to mediate between diverse stakeholders' needs and demands.

The success of the NSDS will depend on the extent to which the Vision and Objectives are understood and embraced and then on people's willingness and commitment to make the changes happen. Suggested actions in support of implementation are set out in Information Box 15.

Stakeholders will require continuing opportunities both to consider how their own actions can help to deliver its Vision and Objectives, and to participate in its ongoing development. Key stakeholders will therefore be engaged in preparing a forward looking, clear and comprehensive Implementation Plan to support the NSDS. This will translate the Strategy and Vision of the NSDS into the social, welfare, economic and other changes and physical action that are necessary to achieve sustainable development.

The process of preparing the Implementation Plan and then keeping it under regular review will be participative, focusing on:

- promoting coordinated and collaborative action;
- identifying and remedying gaps in projects or services;
- assisting stakeholders to avoid duplication while promoting cooperation; and,
- defining agreed programmes of action to achieve strategic national objectives.

Following best practice principles, the Implementation Plan must be:

- Clear – easily understood by everyone;
- Concise – an Implementation Plan that runs into hundreds of pages will not be read or acted upon by stakeholders;
- Sound – logically presented with a clear line between a vision, strategic objectives and a spatial strategy and the programmes and projects, timeframes and resources required for their implementation;
- Focused – identifying who is responsible for managing and implementing programmes and projects; and,
- Integrated – with a clear statement of links to other plans and programmes that can contribute to the achievement of the spatial strategy.

The Implementation Plan's key role is to transform strategy into action. It must be in a form that can be monitored and reviewed and updated on a more regular basis than the comprehensive spatial strategy itself. It must be flexible and adaptable to changes that may be needed in response to the annual planning and budgeting processes of key stakeholders. In essence it must provide a framework for the specific actions and commitments of not just central and local government bodies but also those of other key stakeholders in the business and community sectors.

The process of stakeholder engagement must enable the likely effects and impacts of proposed actions to be identified and evaluated, and this must, as far as possible, include identification of potential unintended consequences as well as those that are intended. The question as to what is the public interest may seem simple but it requires careful and structured consideration of complex factors and interrelationships before it can be answered. Figure 23 is just one example:

Information Box 15

Implementation – Influencing Actions

- Investment and maintenance programmes;
- Development facilitation;
- Development Management;
- Development partnerships;
- Developer responsibilities and contributions;
- Enforcement;
- Participation.

Phasing

Policies and proposals, set within a spatial development strategy with a timescale looking twenty years ahead, have to realistically be part of an Implementation Plan broken down into:

- Short term - where a higher degree of certainty will apply;
- Medium term - where the intention to launch and pursue projects is reasonably strong but may not yet be fully committed; and,
- Longer term - where programmes and projects planned further in advance can only be indicative in nature.

Programmes and projects will be identified over phases of one – two years (short term), two - five years (medium term) and five - ten years (long term).

Monitoring and Evaluation

A clear monitoring and evaluation process enables decision makers and key stakeholders to analyse performance and results relating to policies, programmes and projects, learn from experience (including successes and failures), and use the information to improve future performance.

The Implementation Plan will contain guidelines on monitoring and evaluation and how this process can aid and improve decision-making by:

- facilitating feedback on how policies, programmes and projects are progressing towards achieving their objectives;
- identifying the extent to which stakeholders in different categories are benefitting;
- highlighting the effectiveness and efficiency (or ineffectiveness) of policies, programmes and projects;
- providing information that could help improve policies and programmes and their implementation.

Topics for monitoring indicators have been set out in the ISA and this and other methods can be used to develop the more detailed and measurable indicators necessary for on-going monitoring and evaluation.

IMPLEMENTATION: Identifying intended and unintended effects

Action: Reduce fuel subsidy on Premium gasoline	AIM: Encourage change from car use to other modes (modal shift)	AIM: Reduce / redirect public expense	AIM: Reduce CO2 emissions	AIM: Reduce congestion	EFFECT	PROBABILITY	REACTION
Confirm or reconsider? ↓	x	✓	x	x	←	MEDIUM	Maintain same use but pay more?
	✓	?	✓	✓	←	LOW	Reduce use and switch to other modes?
	x	x	x	x	←	LOW	Switch fuel but maintain same use?

Figure 23: Effects of Implementation

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