SCIP-03: PROGRAM MANAGEMENT, PROJECT PREPARATION AND IMPLEMENTATION SUPPORT FOR PLANNING AND DEVELOPMENT DEPARTMENT

ADB Loan No. 2499-PAK

.

DRAFT GUIDELINES FOR MASTER PLAN PREPARATION

REQUITO V. BELLOSILLO
REGIONAL ECONOMIC & URBAN DEVELOPMENT ADVISOR

JUNE 2012

Engineering General Consultants
EGC (Pvt) Ltd.

SMEC International Pty Ltd.

Table of Contents

INTRODUCTION

These draft Guidelines provide a methodology on the preparation of Master Plans for Sindh's Secondary Cities. These were prepared as part of the outputs of Phase 1 (Preparatory Phase) work under Task A4 of the Sindh Cities Improvement Investment Program (SCIP) – 03.[1]

These draft guidelines provide a starting point for Sindh Province's Directorate of Urban Policy and Strategic Planning (DUPSP) in the development of a manual and model terms of reference for the preparation of master plans for the secondary cities.[2] It provides advice on the institutional and technical aspects that have to be addressed in the preparation of LEDS.

The DUPSP will be oriented on the contents of these guidelines at the first part of Phase 2 (Orientation/ Situation Analysis) of Task A4. The Orientation/ Seminar Sessions will also be used as avenues to further refine this draft by way of discussions between the DUPSP and SCIP-03 Consultant Team and with further consultations with government agencies. A pre-final draft will be produced at the end of the Orientation/ Seminar portion and this version will be piloted in Sukkur and Larkana at the Situation Analysis portion of Phase 2.

The pilot testing of the pre-final draft will continue up to Phase 3 (Planning) work. The expected outputs at the end of Phase 3 are: (1) documentation of lessons learnt from the pilot cities, (2) technical notes on how these Guidelines should be finalised, and (3) Master Plans for Sukkur and Larkana.

The final version of these draft Guidelines is intended to be used by government planners and consultants who will be engaged in the preparation of Master Plans for Sindh's Secondary Cities.

The preparation of these draft Guidelines drew heavily on the wealth of international literature on the preparation of spatial plans, master plans and other forms of physical development plans. Local plans were also reviewed to gain an overview of prevailing master planning procedures and processes in Pakistan. Significant insights were also gained from discussions with key representatives of government agencies, the academe and private sector to include Local Government Department, Planning & Development Department, Building Control Authority, Sukkur Municipal Corporation, Larkana Municipal Corporation, Punjab Urban Unit, Department of Architecture & Planning of NED University, Northern Sindh Urban Services Corporation and Urban Resource Centre.

[1] Task A4 comprises Support Urban Policy and Strategic Planning Unit on implementation of urban planning initiatives and reforms.
[2] SCIP-03's TOR referred to spatial plan which, in these guidelines and in related documents, shall be termed Master Plans to be consistent with the term used in the Sindh Local Government Ordinance 1979.

THE CONTEXT OF MASTER PLANS

Master Planning Approach

A master plan is a policy document that is used by government to guide the physical development of the city in terms of land use and the provision of public facilities. Its preparation considers the multi-dimensional elements that engender a city's development, such as the cause-effect relationship of economic, social, environmental, infrastructure and governance activities. Master planning seeks to harness these activities in such a way as to bring about high quality and livable urban environments.

Master Planning and Overall City Development Planning

The master plan is one of the key elements in the overall context of city development planning, the other being socio-economic development planning. These two elements are inter-linked and most planning decisions are reached through an iterative process between the city's physical and socio-economic dimensions.

These two elements should be guided by a long-term common vision of the city's development. The socio-economic plan is a more strategic plan and is normally prepared with a medium-term horizon (5 years). This is because socio-economic programs and projects should be implemented within the soonest possible time and should be made flexible and highly responsive to rapid shifts in socio-economic conditions. Master plans, on the other hand, are prepared with a long-term horizon (20 years or more) since policy objectives, such as creating "green cities," take longer to be realised. These should, however, be reviewed every five years coinciding with the review of the socio-economic development plan.

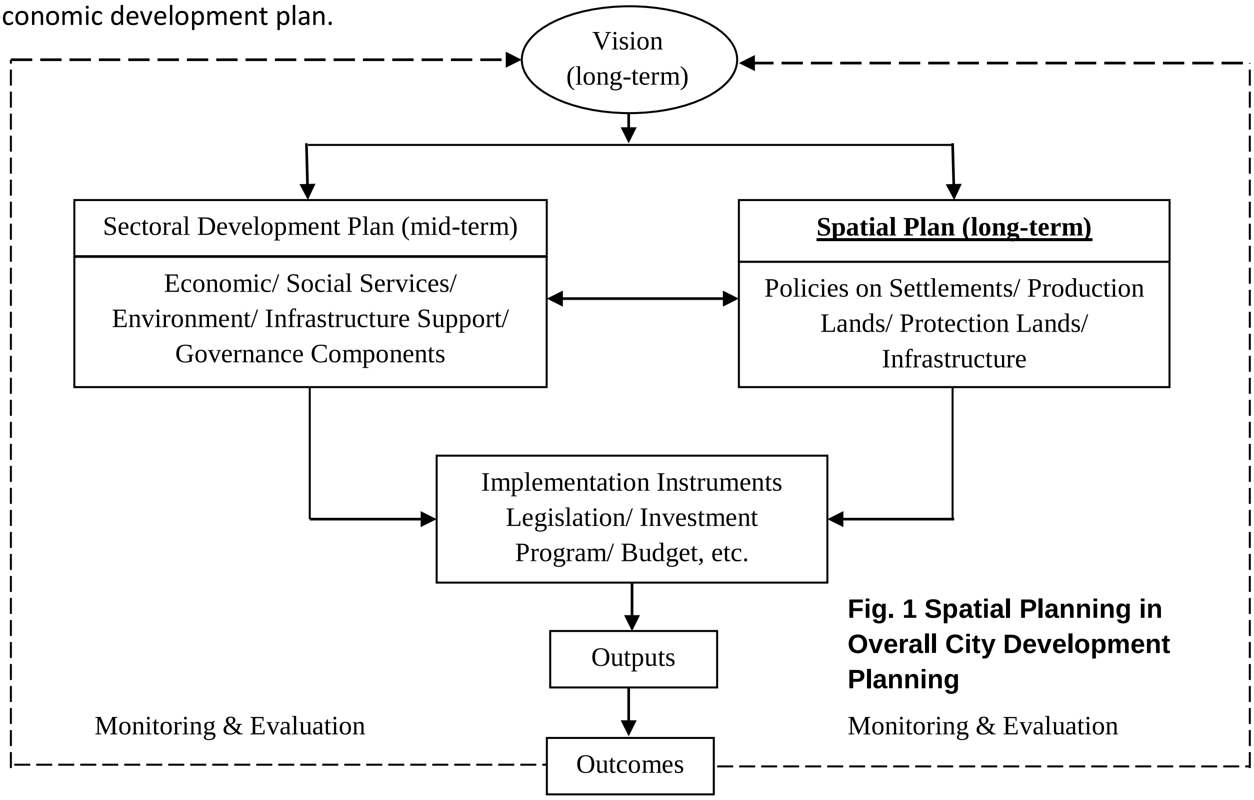

Fig. 1 Spatial Planning in Overall City Development Planning

The Master Planning Process

The Master Planning process follows a sequential series of steps that facilitates the rational assessment of factors that drive spatial development. This assessment will provide an informed basis in the formulation of future spatial development strategies. The process should be done in a participatory manner by having stakeholders participate in problem identification and problem solving. The process is presented in the figure below.

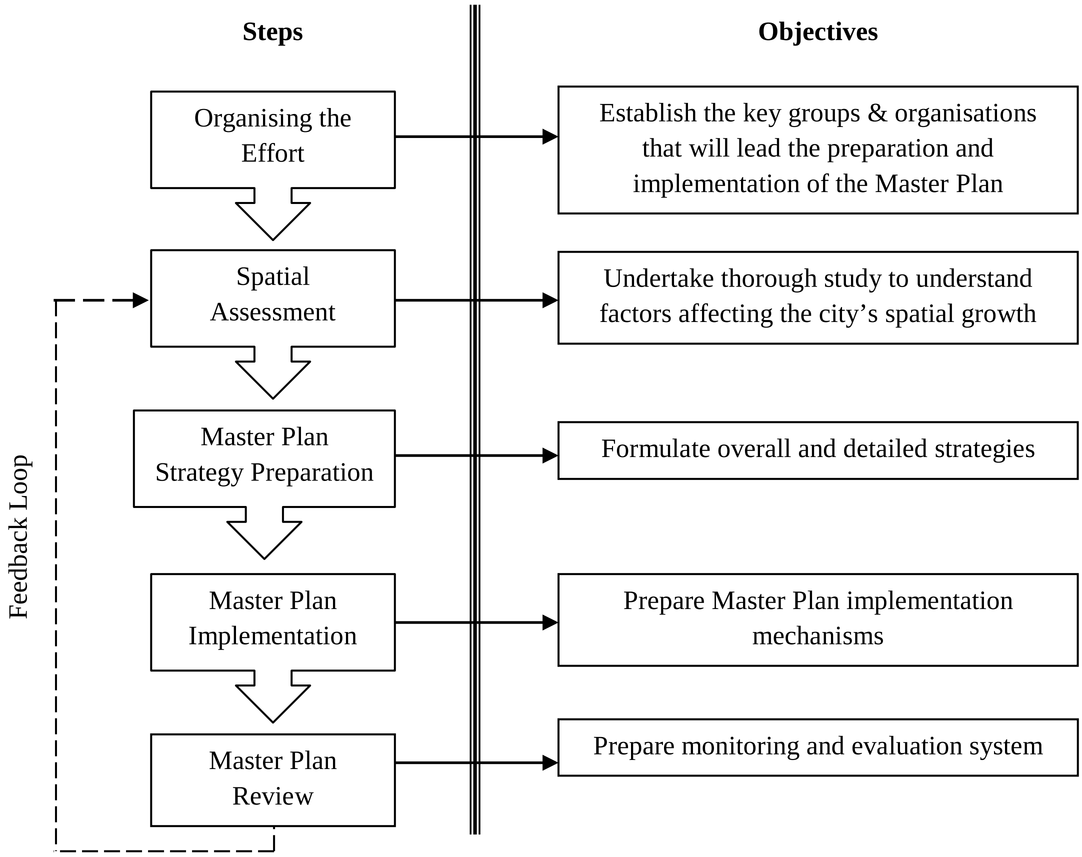

Figure 2. The Master Planning Process

SECTION 1 – ORGANISING THE EFFORT

The first step in preparing the Master Plan is to set up the organisational framework for its preparation and implementation. Master Planning should be led by concerted efforts of the Provincial and Local Governments who will work in conjunction of private stakeholder groups and other government agency partners, such as from the Federal level. A mechanism to pull these groups together has to be put in place at the start of Master Planning activities. The following figure presents the relationship of the key players in the Master Plan process:

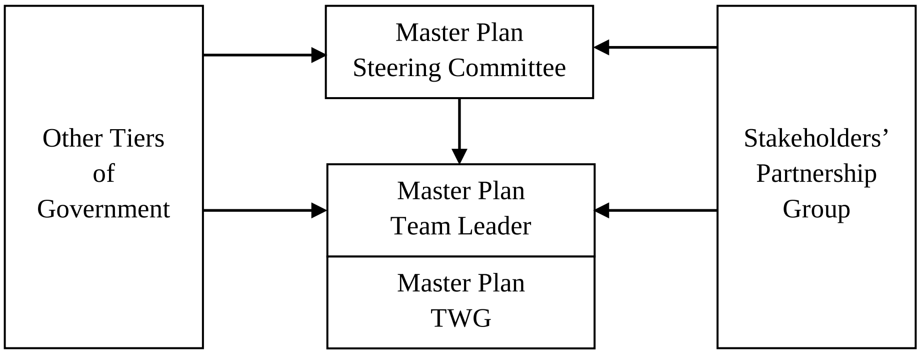

Fig. 1.1 Key Players in the Master Plan Process

1.1 ESTABLISH MASTER PLAN TEAM LEADER AND MASTER PLAN TWG

Master Plan preparation may be done through an external consultant (private sector or Town Planning Department) or in-house by the city government. In any case, it is important to designate a Master Plan Team Leader from the local government in order to build capacities and help sustain the Master Plan during implementation and subsequent re-planning. The designation of a Technical Officer for Planning would be a good starting point in building-up capacities at the city level. If the Master Plan will be prepared through an external consultant, it is important that a mentoring process be introduced, such that the Technical Officer for Planning will be able to carry the plan through the implementation stage. This will be essential particularly in aspects of driving and coordinating policies, programs and projects for implementation.

The Team Leader should be supported by a Master Plan Technical Working Group (TWG) composed of representatives from the various offices of the city government who have expertise on:

- Development Planning
- Economics and Investment
- Infrastructure and Utilities
- Health and Social Services
- Public Administration
- Public Finance
- Mapping
- Monitoring and Evaluation

The capacities of the TWG would also have to be built-up, alongside that of the Team Leader, during the preparation of the Master Plan.

Under the guidance of the external consultant (as applicable), the Team Leader and TWG shall perform the following roles:

- Preparation of work program for Master Plan preparation
- Information gathering
- Stakeholder consultations
- Data processing and analysis
- Strategy formulation
- Workshop facilitation
- Report writing and presentation to decision-makers
- Design of monitoring and evaluation system

1.2 ESTABLISH MASTER PLANNING STEERING COMMITTEE

A Master Plan Steering Committee, comprising decision- and policy-makers, as well as key representatives of the community, should be constituted. This will provide the overall guidance to Master Plan preparation in terms of visions, concepts and ideas. The committee will also be responsible for recommending the Master Plan to the council for formal approval. Following is the recommended composition of the Master Plan Steering Committee:

- the local government (the City Mayor)
- the City Council
- the knowledge community (a leading academic in a related policy field),
- business sector (from property development, retail and industry),
- the informal business community (such as the head of the street traders' association),
- informal communities (housing)
- public health and the environment
- utility service providers
- Sindh Local Government Department,
- Sindh Planning and Development Department and
- Sindh Building Control Authority.

The number of members should be kept at a manageable level and should be no more than 15.

1.3 ESTABLISH MASTER PLANNING STAKEHOLDERS PARTNERSHIP GROUP

The Master Plan has to be prepared in a participatory manner in order to obtain issues and concerns from various stakeholder groups. Good stakeholder consultation will give the community a sense of ownership of the Master Plan. Their support could also be harnessed which is particularly important during implementation. Following are other reasons why stakeholders should be involved in the planning and implementation process:

- credibility, equity and transparency, by opening the planning process to the public;
- effectiveness, as it is easier to understand land use issues when the community is involved. It also contributes to building support, and overcoming resistance and mistrust;
- efficiency, as stakeholders can mobilise their own resources to support and promote

master plan implementation

The size of the Stakeholders Partnership Group should be made manageable. A way to shortlist them is to determine their interest or advocacy, and assess their possible contribution to as well as the degree of importance of these to Master Plan issues. The following matrix can guide the analysis of stakeholders:

Table 1: Stakeholder Analysis Matrix

Stakeholder	**Key interest**	**Contribution**	**Assessment A=Essential; B= Important; C= Minor**	
			Current	**Potential**
1. Government				
City Government				
District Government				
Provincial Government				
2. Knowledge Community				
Universities				
Research Institutions				
3. Local Business Community				
Real Estate Developers				
Trading Companies				
Industrial Companies				
4. Informal Business Community				
Hawker’s Group				
Transport Group				
5. Informal Communities				
Katchi Abadis Group				
6. Public Health and Environment				
Hospital Association				
7. Utility Service Providers				
Water Company				
Power Company				
8. Others				
____________				
____________				

* expand table as needed
Modified from General Organisation for Physical Planning (GOPP) & United Nations Human Settlements Project (UN-HABITAT); Strategic Urban Planning for Small Cities Project; Preparing Strategic Urban Plans for Small Cities; Ministry of Housing, Utilities and Urban Development, Ministry of Local Development Ministry of Economic Development, Nairobi, Kenya

A plan for systematic stakeholders’ consultation should then be prepared. Means to involve them include key informants interviews, focus group discussions and workshops. Community surveys could also be done, if allowed by time and the budget.

1.4 DEVELOP SYSTEMS TO WORK WITH OTHER TIERS OF GOVERNMENT

Other government agencies such as those at the District, Provincial and Federal levels who play important roles in spatial development in terms of land use regulations, policy, infrastructure provision and the like should be identified. A system for regular consultations should be established. This system should cover both Master Plan and Implementation stages. Such a system may include regular coordination meetings, either at the city or at the offices of these agencies. The objective is to regularly determine areas of possible cooperation in terms of land use, infrastructure and other related concerns.

SECTION 2 – SPATIAL ASSESSMENT

A good information base is important in order to gain a thorough understanding of the factors that affect spatial development. This could be built-up by first determining which information are important to Master Plan preparation and then to determine the geographic areas of study. Information should be grouped according to sectoral planning divisions to allow systematic data collection and analysis. These sectoral information should then be pulled together to gain a composite picture of how and why the city is growing. The figure below provides an illustration of the process.

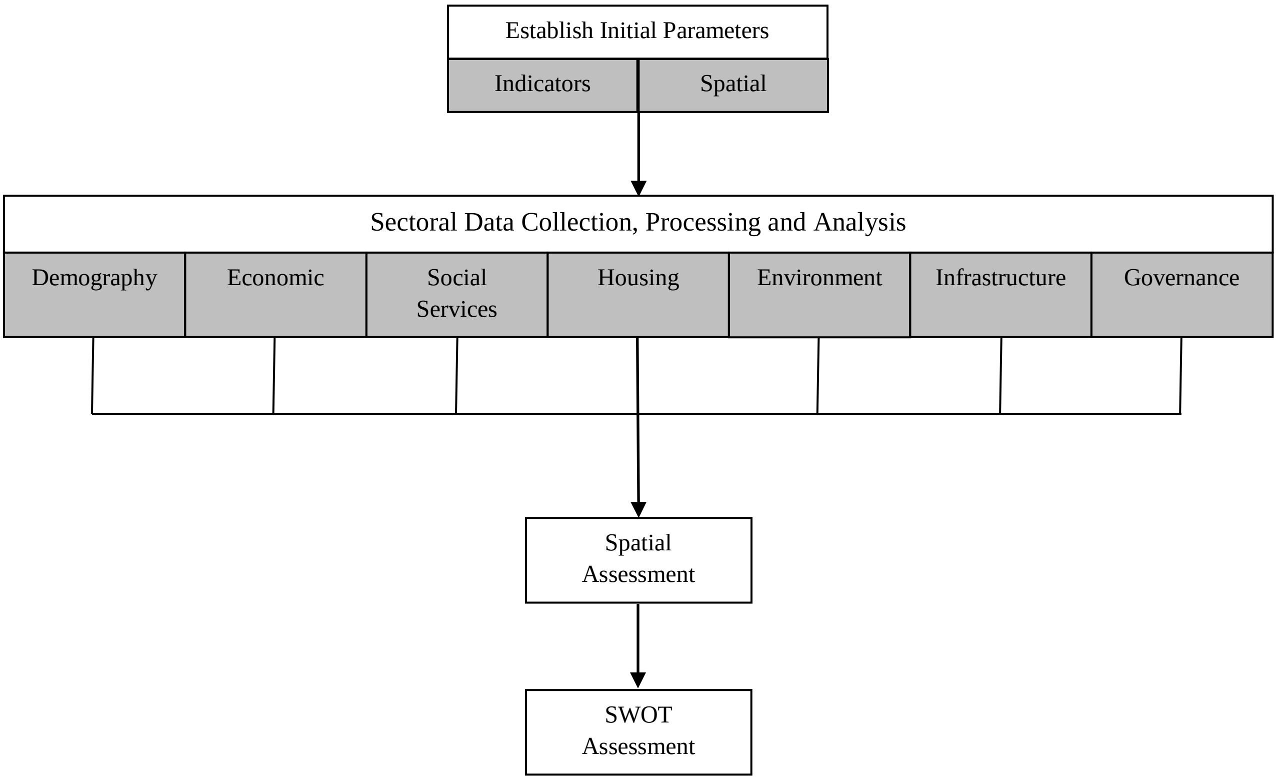

Figure 2.1 Spatial Assessment Flowchart

2.1 ESTABLISH INITIAL PARAMETERS

Data collection and analysis takes up a significant amount of time and resources and the task has the tendency to expand as information are unearthed. Thus, initial parameters have to be established in order for planners not to proceed in a haphazard manner.

2.1.1 Definition of Initial Key Indicators

An initial set of key indicators, grouped according to development sectors, should be listed down. It should be noted that this list may expand as information is collected and as analysis proceeds. These key indicators should be collected with consideration to downstream monitoring and evaluation activities. The following table provides a sample list of these initial indicators.

Table 2.1 Initial List of Key Indicators

Sectoral Division	**Indicators**
1) Demography	Population composition, geographic distribution and historical and anticipated growth patterns
2) Economic Sector	Types of activities, spatial growth, employment levels, relative shares of various activities to the city's total economy, level of service of support facilities and infrastructure, and policy environment
3) Social Services Sector	Level of human development, level of quality of services and facilities, and policy environment
4) Environment Sector	Present characteristics, pollution levels, vulnerability to risks and hazards, and policy environment
5) Infrastructure	Availability, levels of service, and policy environment
6) Governance	Current organisation and management structure and systems relative to spatial development, financial resources, and spatial growth-related legislation and regulations
7) Land Use and Transportation	Existing land use, total road length, levels of service and policy environment

The level and depth of data to be collected will be determined by availability, time and budget. The use of quantitative data is important inasmuch as it gives numerically measurable and comparable figures. However, it is equally important to make use of qualitative data particularly in terms of getting insights from stakeholders which may be normally hidden if analysis is solely based on numeric figures. There will also be cases where data is not available and qualitative data gathering methodologies, such as focus group discussions and interviews, will become the most cost-effective way of getting information.

2.1.2 Spatial Definition

The core spatial parameter includes the urban and the peri-urban areas. The latter is defined as the area at the urban fringe which is still predominantly rural but will most likely be urbanised in the next 10 to 20 years. The next level of definition covers the entire Sindh Province which will help define the city's role in a broader regional context. In cases when a city has a significant role in the country, such as being national transport hub, then the spatial growth assessment will take a national and even international perspective. Giving consideration to external factors that drive and will continue to drive the city's growth is as important as the analysis of internal driving forces.

2.2 SECTORAL DATA COLLECTION, PROCESSING AND ANALYSIS

Spatial assessment seeks to establish and determine the reasons of prevailing spatial growth patterns and then seeks to ascertain future growth requirements and scenarios. A systematic procedure is to examine the city according to its development sectors with an eye towards spatial implications.

2.2.1 Demography

Demographic analysis is concerned with population size and distribution according to number and density. Population growth patterns and movements should be historically tracked and reasonably projected over the planning period. Basic information related to master planning is provided in the table below:

Table 2.2 Selected Demographic Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Composition	
Total population by age group and sex	Provides the total population size and disaggregates into according to age group and sex Useful in measuring the adequacy of social services (e.g. schools for the 0-14 age bracket or senior citizen's facilities for the 65 years and older group) Indicates future growth rates and patterns (i.e. a high number of women at reproductive age - 10 – 45 years old may indicate high future growth rates)
Total population by employment status and economic activity	Provides an indication of the city's economic structure and may be counterpoised to related findings in the economic sector
Average family income	Provides an indication of the financial well-being of families and the magnitude that may be the major targets of spatial development strategies
Poverty incidence	
2. Distribution	
Total population and number of households by Union Council	Provides an indication of the spatial distribution and concentration of the population which is important in determining location-specific programs and projects Provides an indication of the level of urbanisation
Population density by Union Council	
Gross population density	
Built-up area density	
Urban-rural population	
3. Change	
Migration	Provides a basis for projecting population growth
Historical growth rate and total population per census year	Provides a picture of future demands for housing, social services, infrastructure Provides a picture on the potential geographic spread of the city
Projected annual city population by Union Council, i.e, 25 years	
Doubling time	Provides information on when the city's population will double from that of the base year
Projected population by age group and sex	Provides a basis in estimating the type of future economic and social service requirements

Summarise findings and observations

Findings and observations should be summarised and a strengths, weaknesses, opportunities and threats (SWOT) list prepared. The elements to be included in the

SWOT list should be limited to those that have or will have direct bearing to local economic development. A sample summary SWOT list is presented below:

Table 2.3 Summary SWOT List – Demography

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Composition				
Distribution				
Change				

2.2.2 Economic Sector

The present and anticipated economic structure of the city, and its implications to spatial pattern and growth, should be analysed. This should be done by first examining the economy according to its component sub-sector and then coming up with a holistic sector assessment.

A common framework could be used as reference in the assessment of the components of the local economy, as presented below:

- An examination of sub-sectoral profile and trends in terms of types of activities, spatial growth, employment, and share to the city's economy
- An assessment of the kind and adequacy of facilities and infrastructure that support sub-sector activities
- An assessment of international national, provincial and local policies that affect sub-sector activities
- An assessment of pipelined major programs and projects that will affect sub-sectoral activities
- An assessment of current and projected needs in terms of enabling policies, support infrastructure, etc.

The assessment follows the following steps:

- Prepare a plan for data collection, processing and analysis

Using the initial set of key indicators as a guide, a more detailed set of sector-specific data requirements should be developed according to the agreed framework of assessment. Once these have been firmed up, a plan on how to process and what aspects to examine should be laid out.

Sample statistical tables are presented in Appendix A.

- Determine means of data collection and possible sources

.

How and where data will be collected should also be determined at the onset. A mixture of quantitative and qualitative methods will most likely be employed and information will be collected from both primary and secondary sources.

- Summarise findings and observations

The findings and observations in the sector should be summarised. The Strengths-Weaknesses-Opportunities-Threats (SWOT) framework would be useful to organise these. The sector-specific SWOT outputs could then be used as inputs at the convergence point, that is, during the inter-sectoral assessment which will become the basis of strategy formulation.

Commerce

The assessment of commercial activities involves tracking its growth in terms of area and number and size of establishments. The spatial growth pattern of the city may, in most instances, be inferred from the growth of its commercial areas as these normally are the locations where activities are most intense. Commercial areas have the ability to create a distinct character for the city, whether through its geographic spread or through its urban design qualities. Anticipated future needs, in terms of infrastructure and regulation should also be determined.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.4 Selected Commerce Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Inventory of commercial areas	Provides information on the type of commercial areas (shopping mall, wet and dry market, office areas, commercial strip, etc.) and their location in the city. Use map presentation
Growth of commercial areas	Determination of growth in terms of area coverage along with the direction of growth in space. Examine emerging trends in physical development (design patterns, quality, concepts, etc.) Use time-series (at least 5 years) and map presentation.
Number of business permits Issued by type of activity, employment size and market linkages	Provides information on the number and type of commercial activities (hotels and restaurants, wholesale and retail trade, banking, construction, etc.) and number of employees which may be used in ascertaining future growth trends Compare to total city employment Use time-series (at least 5 years) presentation
2. Support facilities and infrastructure	
Type of present support facilities and infrastructure	Provides information regarding the availability and adequacy of transport and transit facilities and infrastructure, etc.
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector	Provides information regarding the present and future enabling policy environment such as service standards, zoning and building regulations, etc.

activities	
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage commercial activities in the city.
5. Current and projected needs	
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to such as urban renewal, increased commercialisation of plots, enhancement of zoning and building regulations, etc.

- Determine means of data collection and possible sources

The plan on how to obtain data requirements may be guided by the following table:

Table 2.5 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Trade and Industry Department District Office Local Government Various media reports
Qualitative	Primary:	
	Focus group discussions Key informant interviews	Key officers from: - Trade and Industry Department - District Office - Local Government - Commercial establishments - Industry associations - Employees'/ Workers' associations
	Physical inspection of facilities	Selected commercial establishments

<u>Industry</u>

The analysis of the industry sub-sector revolves around determining current and anticipated spatial distribution patterns along with infrastructure and facility requirements. Other key aspects of examination are environmental impacts of industries to the environment and to neighborhoods as well.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.6 Selected Industry Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Inventory of industrial areas	Provides information on the type of industrial establishments, area occupied and their location in the city. Use map presentation
Growth of industrial areas	Determination of growth in terms of area coverage along with the direction of growth in space. Examine emerging trends in physical development (design patterns, quality, concepts, etc.) Use time-series (at least 5 years) and map presentation.
Number of business permits Issued by type of activity, employment size and market linkages	Provides information on the number and type of industries, number of employees and their location which may be used in ascertaining future growth trends Compare to total city employment Use time-series (at least 5 years) presentation
Existing hazardous and/or pollutive industries	Provides an indication of environmental safeguards that have to be put in place
Natural resources with potential for industrial development (mining, manufacturing, logging, etc.)	Provides an indication regarding what other industries may be encouraged to locate in the city
2. Support facilities and infrastructure	
Type of present support facilities and infrastructure	Provides information regarding the availability and adequacy of transport and transit facilities and infrastructure, etc.
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will directly affect sub-sector activities	Provide information regarding the present and future enabling policy environment such as free trade agreements, special economic zone regulations, service standards, zoning and building regulations, etc.
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage industrial activities in the city
5. Current and projected needs	
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as establishment of free trade zones, re-use of derelict sites, enhancement of zoning and building regulations, etc.

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.7 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Industries and Commerce Department District Office Local Government Various media reports
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key officers from: - Industries and Commerce Department - District Office - Local Government - Key officers of industrial establishments - Industry associations - Employees'/ workers' associations
	Physical inspection of facilities	Selected industrial establishments

Tourism

Assessment should revolve around current spatial distribution of both facilities and attractions and on the adequacy of related public infrastructure. Future growth scenarios should also be portrayed through a realistic assessment of the city's tourism potentials.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.8 Selected Tourism Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Inventory of tourism establishments and attractions	Provides information on the type of tourism establishments and attractions, area occupied, their location in the city and type of ownership (government, private, etc.) Use map presentation
Number of business permits Issued and employment size by type of activity	Provides information on the number and type of tourist establishments, location and number of employees which may be used in ascertaining future growth trends Compare to total city employment Use time-series (at least 5 years) presentation

Facilities in existing tourism establishments and markets catered	Provides information on the type and capacity of tourism facilities (accommodation, restaurants, transport services, etc.) and markets catered (domestic or foreign)
Accessibility of existing tourism establishments and tourist attractions	Provides information regarding the accessibility in terms of roads and various transport modes (air, rail, water, etc.)
Tourism activities and events	Provides information on the date, frequency and duration of activities and events
Visitor arrivals	Provides information on the number of tourists, purpose of travel, peak season of arrivals and country of origin. Provide monthly and yearly (past 5 years) time-series presentation
Potential tourist attractions	Provides information on and assess the quality of attractions that may further be developed
2. Support facilities and infrastructure	
Inventory of tourism support facilities and services	Provide information regarding the availability and adequacy of transport and transit facilities and infrastructure, etc.
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as free trade agreements, heritage preservation, enhancement of zoning and building regulations, etc. Provides information on rules and regulations to govern the business operation of tourism establishments and related activities such as hotel and motel codes, facility standards, etc.
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage tourism activities in the city
5. Current and projected needs	
Additional facilities and services required to handle current and additional volume of visitors	Provides an indication of the type and capacity requirements of tourist facilities based on present and projected number of tourist arrivals
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as declaration of tourism zones, enhancement of zoning and building regulations, etc.

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.9 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	Culture Department Antiquities Department District Offices
	Records and reports Media review	Culture Department District Office Local Government Local Regulations Office Various media reports
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key officers from: - Culture Department - Antiquities Department - District Office - Local Government - Local Regulations Office - Key officers of tourism establishments - Industry associations - Employees'/ workers' associations
	Physical inspection of facilities	Selected tourism establishments and attractions

<u>Agriculture</u>

The assessment of the Agriculture sub-sector should consider historical and anticipated settlement growth patterns, productivity of crop lands, support facilities and infrastructure and the food requirements of the population.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.10 Selected Agriculture Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Location and area of lands devoted to agricultural production	Provides information of growth in terms of area coverage Use past 5 years' time-series and map presentation
Comparative agricultural crop areas	Provides information on area devoted to each crop and percentage of agricultural land planted to each crop
Comparative production data	Provides a comparison on volume and value of production per major crop Compare with other cities and determine provincial/ national share of production
Employment	Provides information on the number of people directly employed in the sub-sector and its share to total city employment which may be used in ascertaining future

	growth trends Compare to total city employment Use time-series (at least 5 years) presentation
Environmental issues/concerns that need to be addressed	Provides information on the degree and sources of pollution/degradation of agricultural areas, if any
2. Support facilities and infrastructure	
Physical infrastructure and facilities	Provides information on type, coverage and status of irrigation, farm-to-market roads, water supply, post-harvest facilities, etc.
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as conservation of prime agricultural lands, rules on re-classification, etc.
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage sub-sector activities in the city
5. Current and projected needs	
Present and projected demand of the city's population for agricultural products	Provides an indication on whether present levels of production could meet domestic requirements and what levels will be needed to meet future demand
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as no-reclassification policies, enhancement of zoning and building regulations, etc.

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.11 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary:	
	Records and reports Media review	Agriculture Department District Office Local Government Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key officers from: - Agriculture Department

		- District Office - Local Government - Agricultural firms - Workers' associations
	Physical inspection of facilities	Selected agricultural farms

Livestock and Fisheries

The assessment of the Livestock and Fisheries sub-sector should likewise consider historical and anticipated settlement growth patterns, productivity of livestock and fisheries areas, support facilities and infrastructure and the food requirements of the population.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.12 Selected Livestock and Fisheries Sub-Sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Location and area of lands devoted to livestock and fisheries production	Provides information on growth in terms of area coverage Use past 5 years' time-series and map presentation
Comparative livestock and fisheries areas	Provides information on area devoted to livestock (sheep, goat, chicken, etc.) and fisheries (trout, carp, etc.) by type and percentage of area devoted to each
Comparative production data	Provides a comparison on volume and value of production per major livestock and fisheries product Compare with other cities and determine provincial/ national share of production
Employment	Provides information on the number of people directly employed in the sub-sector and its share to total city employment which may be used in ascertaining future growth trends Compare to total city employment Use time-series (at least 5 years) presentation
Environmental issues/concerns that need to be addressed	Provides information on the degree and sources of pollution/degradation of livestock and fisheries resource areas, if any
2. Support facilities and infrastructure	
Physical infrastructure and facilities	Provides information on type, coverage and status of farm-to-market roads, water supply, post-harvest facilities, etc.
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will	Provides information regarding the present and future enabling policy environment such as conservation of prime agricultural lands, rules on re-classification, etc.

directly affect sub-sector activities	
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage sub-sector activities in the city
5. Current and projected needs	
Present and projected demand of the city's population for livestock and fisheries products	Provides an indication on whether present levels of production could meet domestic requirements and what levels will be needed to meet future demand
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to promote sub-sector production

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.13 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Livestock and Fisheries Department District Office Local Government Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key officers from: - Livestock and Fisheries Department - District Office - Local Government - Livestock and fisheries firms - Industry associations - Employees'/ workers' associations
	Physical inspection of facilities	Selected livestock and fisheries farms

Forestry

Sub-sector assessment should deal with the delineation of protection and production forestlands and the environmental issues that should be addressed. Consideration should likewise be given to facilities and infrastructure service provision as well as policies and legislation that affect forestlands.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.14 Selected Forestry Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Location and area forest lands by type	Provides information on area coverage of forest lands (riverine, irrigated, mangrove, rangelands) compared to total city area Use time-series presentation (at least 5 years) and map presentation
Comparative production data	Provides comparison on volume and value of production per major forest product Compare with other cities and determine provincial/ national share of production
Employment	Provides information on number of people directly employed in the sub-sector and its share to total city employment which may be used in ascertaining future growth trends Compare to total city employment Use time-series (at least 5 years) presentation
Environmental issues/concerns that need to be addressed	Provides information on degree and sources of pollution/degradation of forest lands, if any
2. Support facilities and infrastructure	
Physical infrastructure and facilities	Provides information on type, coverage and status of farm-to-market roads, water supply, post-harvest facilities, etc.
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as forest protection, logging bans, etc.
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may further encourage sub-sector activities in the city
5. Current and projected needs	
Present and projected demand of the city's population for forest products	Provides an indication on whether present levels of production could meet domestic requirements and what levels are needed in the future
Infrastructure and utilities support requirements	Provides an indication of what support infrastructure and utilities should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to promote sub-sector production

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.15 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Forest Department District Office Local Government Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key officers from: - Forest Department - District Office - Local Government - Forestry companies - Industry associations - Employees'/ workers' associations
	Physical inspection of facilities	Selected forestry farms

<u>Informal Sector</u>

Analysis of the Informal Sector of the economy shall consider the type and location of activities, access to support facilities and services and the policy environment.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.16 Selected Informal Sub-Sector information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and Trends	
Inventory of areas occupied by informal settlements	Provides information on location and area occupied by settlements and percentage to total city area Track growth by using time-series (at least 5 years) presentation
Population and number of households	Provides information on population size and number of households per settlement area and percentage of the total population to total city population Use time-series (at least 5 years) presentation
Socio-economic characteristics	Provides information on education, income, ethnicity, health status, public safety conditions, etc. Provides information on type of employment and livelihood

	(home-based livelihood workers, street hawkers, ambulant vendors, etc.)
2. Support Facilities and Services	
Physical infrastructure and facilities	Provides information on the type and quality of roads, water supply, drainage, health facilities, etc. in settlements
3. Affecting policies	
Inventory of international, national, provincial and local policies that directly and will directly affect informal sector economic activities	Provides information regarding the present and future enabling policy environment such as resettlement and relocation, zoning and building regulations, etc.
4. Major programs and projects in the pipeline	
Inventory/ description of related programs and projects that have been approved for implementation	Provides information regarding upcoming developments that may affect the informal sector such low income housing projects, on-site improvement schemes, etc.
5. Current and projected needs	
Infrastructure and services support requirements	Provides an indication of what support infrastructure and services should be enhanced and provided
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to address the issue of informal sector economic activities such as regional development, zoning and building regulations, etc.

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.17 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Population Welfare Department Social Welfare Department Katchi Abadi Authority District Offices Local Government Non-government Organisations Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Population Welfare Department - Social Welfare Department - District Offices - Local Government - Informal Settler Associations - Non-government Organisations

	Physical inspection of settlements	Selected informal settlement sites

Summarise findings and observations

The Economic Sector should then be analysed holistically in light of the sub-sectoral findings above and in terms of their spatial implications. Such an assessment should be done in participatory settings and participation of the Master Plan Steering Committee and Technical Working Group, along with an extended stakeholders group, is highly recommended.

There are several tools that may be used to assist in the analysis and gain an understanding of the city's economy, depending on data availability. The most commonly used tools include Sector Share Analysis, Shift-Share Analysis, Location Quotient, Economic Base Analysis and SWOT Analysis[3]. These tools and the information they provide are presented in the table below:

Table 2.18 Commonly used tools to understand the structure of the local economy

Area of Analysis	Tools for Analysis	Information provided
Understanding the city's economic structure	Sector Share Analysis	Basic structure of the local economy
		Dominant economic sector in terms of Production, employment and output
	Shift-Share Analysis	Performance of the local economy's different sectors relative to a reference economy, such as the province or the country
		Degree by which local employment growth is influenced by national employment growth
		Degree by which the city's total employment growth is influenced by the various economic sub-sectors
		Understanding of the relationship between the city's economic growth and developments in other sectors of the city
Determination of the city's economic specialisation	Location Quotient Analysis	Shows the specialisation (or importance) of the city's various economic activities relative to that of a larger area, such as the province
Determination of the city's economic base	Economic Base Analysis	Degree by which the city's economy is driven by its export-oriented firms Identifies which type of firms drives the city's export economy Provides information on the proportion of the city's labour force working in the export sector
Assessing the city's competitiveness	Benchmarking	Performance of the city's economy in relation to a reference economy such as other similar cities in the country and internationally

[3] A comprehensive list and discussion of various tools for analysis is provided in the Full LED Guide published by the Cities Alliance.

	SWOT Analysis	Provides information on the city's overall economic strengths, weaknesses, opportunities and threats Provides information on the SWOT of a particular economic aspect in relation to another aspect of the economy

Findings and observations obtained quantitatively and qualitatively could be captured and summarised into a list of the economic sector's SWOT. A sample sector summary SWOT matrix is shown below.

Table 2.19 Summary SWOT List – Economic Sector

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Commerce				
Industry				
Tourism				
Agriculture				
Livestock and Fisheries				
Forestry				
Informal Sector				

2.2.4 Social Services Sector

The assessment of the spatial development implications includes the examination of the status of present facilities and services as well as anticipated future requirements. These will be counterpoised with key human development indices particularly in aspects of health and education. A sub-sectoral approach should also be utilised in order to provide for systematic assessment.

The framework of analysis could be similar to that of the Economic sector as shown below:

- An examination of sub-sectoral profiles and trends that reflect the level of human development
- An assessment of the kind and adequacy of facilities and infrastructure that support sub-sector activities
- An assessment of national, provincial and local policies that affect sub-sectoral activities
- An assessment of pipelined major programs and projects that will affect sub-sectoral activities
- An assessment of current and projected needs in terms of enabling policies, support infrastructure, etc.

The assessment could likewise be according to the following steps:

- Prepare a plan for data collection, processing and analysis

Using the initial set of key indicators as a guide, a more detailed set of sector-specific data requirements should be developed according to the agreed framework of assessment. Once these have been firmed up, a plan on how to process and what aspects to examine should be laid out.

Sample statistical tables are presented in Appendix B.

- Determine means of data collection and possible sources

.

How and where data could be collected should also be determined at the onset. A mixture of quantitative and qualitative methods will most likely be employed and information will be collected from both primary and secondary sources.

- Summarise findings and observations

The findings and observations in the sector should be summarised. The Strengths-Weaknesses-Opportunities-Threats (SWOT) framework would be useful to organise these. The sector-specific SWOT outputs could then be used as inputs at the convergence point, that is, during the inter-sectoral assessment which will become the basis of strategy formulation.

<u>Health</u>

The Health Sub-sector deals with the health profile of the population, quality of government, private and non-government organisation health services measured as well as services provided by the informal sector.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.20 Selected Health Sub-Sector information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
General health situation	Presents key health indicators such as Morbidity Rate, Malnutrition Rate, Crude Death Rate, Infant Mortality Rate, etc. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Leading causes of morbidity	Presents the top ten causes of morbidity Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Leading causes of mortality	Presents the top ten leading causes of death. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Rate of malnutrition	Presents the malnutrition rate according to degree of severity (first, second or third) per Union Council. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.

2. Facilities and services	
Government and private medical health facilities and personnel	Provides an inventory of the type, capacity and physical condition of health facilities (District, TMA and UC) and their corresponding personnel complement (doctors, nurses, lady health workers, female health technicians, etc.). Compare with existing national standards[4]
Traditional *unani* and *ayurvedic* facilities and services	Provides an inventory of service providers of traditional medical practices
Informal structures	Provides an inventory of informal structures and the services they provide (ex. General merchandise stores selling medicines)
Number of households with sanitary toilet facilities	Provides information per Union Council and in comparison to the total city population
3. Accessibility of facilities and services	
Mapped location of health facilities	Provides information regarding accessibility of facilities to the population in relation to the location and distribution of the population and presence and condition of access roads
4. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as service standards, environmental laws, zoning and building regulations, etc.
5. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment the present level of service
6. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as zoning and building regulations, environmental policies, etc.
Current and projected needs for health facilities (number of beds, services, etc.) and personnel based on national service standards	Provides an assessment of needs based on existing and projected population and national standards Present also according to the perceptions of health services providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

[4] See requirements provided in the National Reference Manual on Planning and Infrastructure Standards, Ministry of Housing & Works, Environment & Urban Affairs Division.

Table 2.21 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Health Department EDO (Health) Maternal and Child Health Care Centres Basic Health Units Rural Health Centres Tehsil Headquarter Hospital District Headquarter Hospital Local Government Private facilities (regular hospitals, nursing homes/ centres, clinics) Health-related non-government organisations Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Government health units - Private health facilities - Informal health service providers - Business community
	Physical investigation of facilities	Selected government and privately-owned health facilities

Education and Literacy

This will deal with the adequacy of Education and Literacy facilities which may be measured through key demographic indicators and benchmarked against established service standards.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.22 Selected Education and Literacy Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
General education and literacy situation	Provides information on key education and literacy indicators such as percentage of population according to highest educational attainment and literacy rate. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Enrolment participation rates	Provides ratios of those enrolled to the school going age population per age bracket using time series data (say past 5 years) in comparison with national, provincial and other cities' rates
Drop-out rate	Provides ratios of information on the proportion of

	students who didn't finish schooling per level using time series data (say past 5 years) in comparison with national, provincial and other cities' rates
Projected school-going age population over the planning period	Provides information on the projected number of students by level over the planning period
2. Facilities and services	
Government and privately-owned schools and universities	Provides an inventory of schools by level, type, facilities, physical condition, number of teaching personnel and total enrolment Include vocational and technical schools
Student - teacher and student - classroom ratio by level	Provides ratios indicating adequacy of classrooms and teaching personnel in government and privately-owned schools and universities Compare summary ratios with national, provincial and other cities' rates Compare with existing national standards[5]
3. Accessibility of educational facilities	
Mapped location of educational facilities	Provides information regarding accessibility of educational facilities to the school-going age population in relation to the location and distribution of schools, presence and condition of access roads, and students' safety
4. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as service standards, zoning and building regulations, etc.
5. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment the present level of service
6. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as zoning and building regulations, etc.
Current and projected need for educational facilities	Provides information on requirements for classrooms and other facilities based on existing and projected population and national standards Present also according to the perceptions of education and literacy services providers and the community
Projected need for educational personnel	Provides information on requirements for teaching and non-teaching personnel based on existing and projected population and national standards

[5] Ibid.

	Present also according to the perceptions of education and literacy services providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.23 Type of data, means of data collection and possible sources

Type of data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Structured survey amongst personnel from government and privately-owned schools and the community at large
	Secondary	
	Records and reports	Ministry of Education Education and Literacy Department EDO (Education) Local Government Government owned schools Privately-owned schools
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Education and Literacy Department - Schools and learning institutions - Student groups - Parents and teachers associations - Business community
	Physical investigation of facilities	Selected government and privately-owned educational facilities

Social and Population Welfare

Assessment of the Social and Population Welfare sub-sector considers facilities and services that are made available to and will be required by disadvantaged groups.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.24 Selected Social Welfare Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Poverty incidence	Provides information on the number and percentage of the city's population living under the poverty threshold. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Profile of disadvantaged groups	Provides an inventory and profile of disadvantaged groups such as families, women, children and youth, senior

	citizens, disabled and victims of natural and man-made disasters Use time series (say past 5 years) presentation
2. Facilities and services	
Social and population welfare facilities and personnel	Provides an inventory of social and population welfare organisations (government, private, Voluntary Social Welfare Agencies, etc.), the services each of them and their corresponding personnel complement (including social service volunteers).
3. Accessibility of facilities and services	
Mapped location of facilities	Provides information regarding accessibility of facilities to the population in relation to the location and distribution of the population and presence and condition of access roads
4. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as service standards, zoning and building regulations, etc.
5. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment the present level of service
6. Current and projected needs	
Enabling policy environment requirements	Provide an indication of what policies and legislation could be initiated such as zoning and building regulations, etc.
Current and projected needs for facilities and personnel	Provide information on requirements based on existing and projected population and national standards Present also according to the perceptions of social and population welfare service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.25 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports	Social Welfare Department Population Welfare Department Women Development Department District Offices Local Government Non-government organisations

Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Social Welfare Department - Population Welfare Department - Women Development Department - Women's groups, senior citizens groups, etc. - Non-government organisations
	Physical investigation of facilities	Selected government and privately-owned social and population welfare facilities

Culture

Assessment will revolve around the type, quality and adequacy of cultural services and facilities to include heritage sites, museums, public halls and community services, public recreation facilities, etc.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.26 Selected Culture Sub-sector information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Facilities and services	
Cultural facilities and services	Provides an inventory of existing cultural facilities and services and clients served Provides a description of the physical condition of cultural facilities including availability of auxiliary facilities thereat (toilets, benches, lights, etc.)
Events held	Provides an inventory of the type and number of regular and special events held on a yearly basis
Visitor arrivals	Provides the number of visitors in the cultural facilities Use time-series (past five years) presentation
2. Accessibility of facilities and services	
Mapped location of cultural facilities	Provides information regarding accessibility in relation to the location and distribution of the population and presence and condition of access roads
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as heritage conservation laws, zoning and building regulations, etc.
4. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for	Provides information on how these could augment the provision of culture-related services and facilities

implementation	
5. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as zoning and building regulations
Current and projected needs for facilities	Provides estimates based on existing and projected population and standards and directives, if any Present also according to the perceptions of culture services providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.27 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary:	
	Records and reports	Culture Department Antiquities Department Local Government Non-government organisations Media
Qualitative	Primary:	
	Focus group discussions, key informant interviews	Key representatives from: - Culture Department - Antiquities Department
	Physical inspection of facilities	Selected cultural facilities

Sports and Recreation

Assessment will revolve around the provision, adequacy and accessibility of Sports and Recreation facilities to various neighbourhoods in the city,

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.28 Selected Sports and Recreation Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Facilities and services	
Existing sports and recreation facilities and services and their status	Provides an inventory of sports and recreation facilities according to number, type, ownership, land area and location including those in schools and private residential areas Provides a description of the physical condition of the sports and recreation facilities including availability of auxiliary facilities thereat (toilets, benches, lights, etc.)

Events held and visitor arrivals	Provide an indication on the number and type of events held as well as the number of visitor arrivals in the major sports and recreation areas Use time-series (past five years) presentation
2. Accessibility of facilities and services	
Mapped location of sports and recreation facilities	Provides information regarding accessibility in relation to the location and distribution of the population and presence and condition of access roads
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as service standard requirements, zoning and building regulations, etc.
4. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment and improve sports and recreation activities
5. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated such as zoning and building regulations, etc.
Current and projected needs for facilities and personnel	Provides estimates based on existing and projected population and standards and directives, if any[6] Present also according to the perceptions of sports and recreation service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.29 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports	Sports Department Local Government Local Infrastructure and Services Office Various schools
Qualitative	Primary	
	Focus group discussions, key informant interviews	Key representatives from: - Sports Department - Various schools
	Physical inspection of	Selected sports and recreation facilities

[6] Ibid.

	facilities	

Public Safety

Assessment will revolve around an inventory of Public Safety facilities which will be examined according to the needs of the serviced community. Key indices will also be developed to facilitate the evaluation of the adequacy and efficiency of these facilities.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.30 Selected Public Safety Sub-sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Crime incidence	Provides information regarding crime rate and crime incidence by type Use time-series (past 5 years) and comparative (national, provincial and adjacent towns) presentation.
Crime solution efficiency	Provides information regarding crime solution efficiency by type Use time-series (past 5 years) and comparative (national, provincial and adjacent towns) presentation.
Fire incidence for the last 5 years	Provides information regarding number of fires per year Use time series (past 5 years) presentation
Occurrence of natural and man-made disasters	Provides information regarding number of natural and man-made disasters and the number of affected people Use time series (past 5 years) presentation
Level of assistance to victims of natural and man-made disasters	Provides information on the number of assisted people and type of assistance given due to natural and man-made disasters Use time series (past 5 years) presentation
Mortality rates	Provides number of deaths per year Use time series (past 5 years) presentation
2. Facilities and services	
Civil defence services	Provides information on capability of civil defence services in terms of facilities, personnel and equipment to include jails, detention homes, patrol cars, etc.
Fire fighting services by facility, personnel and equipment	Provides information on capability of fire fighting services in terms of facilities, personnel and equipment to include fire trucks, safety gear, etc.
Emergency rescue (flood, famine and other disasters) services by facility, personnel and equipment	Provides information on capability of emergency rescue services in terms of facilities, personnel and equipment to include evacuation centres, rubber boats, etc.

Number and capacity of existing burial and burning places	Provides information on capability of existing burial and burning places in terms of area and accommodation
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as service standard requirements, etc.
4. Accessibility of facilities and services	
Mapped location of Public Safety facilities	Provides information regarding accessibility in relation to the location and distribution of the population and presence and condition of access roads Provides information regarding average response time in case of police and fire fighting services Provides information regarding distances, means of access, and time needed to reach evacuation centres Provides information regarding accessibility of burial and burning places to the community
5. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment the present level of service
6. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to improve quality of services
Current and projected needs for facilities and personnel	Provides estimates based on existing and projected population and standards and directives, if any[7] Present also according to the perceptions of public safety service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.31 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Home Department Sindh Police Provincial Disaster Management Authority

[7] Ibid.

		Regional Office District Office Local Government Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Home Department - Sindh Police - Provincial Disaster Management Authority - Regional Office - District Office - Local Government - Disaster victims
	Physical inspection of facilities	Various public safety facilities

Summarise findings and observations

The salient findings and observations should be discussed by the Master Plan Steering Committee and Master Plan TWG. These may also be summarised through a SWOT list. It should be noted that the elements to be included in the list should be limited to those that have or will have direct bearing to local economic development.

Table 2.32 Summary SWOT List – Social Services Sector

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Health				
Education and Literacy				
Social and Population Welfare				
Culture				
Sports and Recreation				
Public Safety				

2.2.5 Housing

Housing Sector assessment will cover private, government, low income and informal housing. These should be assessed according to quantity and adequacy, geographic location, occupancy rates, and support infrastructure and community services. The availability of existing land banks and potential areas for housing development should also be examined in light of anticipated future requirements.

The framework of analysis that could be used is shown below:

- An examination of sectoral profile and trends that reflect the housing situation
- An assessment of the kind and adequacy of facilities and infrastructure that support sector activities
- An assessment of national, provincial and local policies that affect sectoral activities
- An assessment of pipelined major programs and projects that will affect sectoral activities

- An assessment of current and projected needs in terms of enabling policies, support infrastructure, etc.

The assessment could likewise be according to the following steps:

- Prepare a plan for data collection, processing and analysis

Using the initial set of key indicators as a guide, a more detailed set of sector-specific data requirements should be developed according to the agreed framework of assessment. Once these have been firmed up, a plan on how to process and what aspects to examine should be laid out.

Sample statistical tables are presented in Appendix C.

- Determine means of data collection and possible sources

.

How and where data could be collected should also be determined at the onset. A mixture of quantitative and qualitative methods will most likely be employed and information will be collected from both primary and secondary sources.

- Summarise findings and observations

The findings and observations in the sector should be summarised. The Strengths-Weaknesses-Opportunities-Threats (SWOT) framework would be useful to organise these. The sector-specific SWOT outputs could then be used as inputs at the convergence point, that is, during the inter-sectoral assessment which will become the basis of strategy formulation.

<u>Prepare a plan for data collection, processing and analysis</u>

The following table provides a guide to data collection, processing and analysis:

Table 2.33 Selected Housing Sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Profile and trends	
Housing Situation	Provides information such as ratio of housing units to total households, ratio of household population to occupied housing units, number of occupied and vacant housing units, housing backlog, etc. Use time series (say past 5 years) and comparative (with national, provincial and other cities) presentation.
Inventory of existing government and privately-developed housing areas	Provides an inventory showing land area, number of saleable lots, occupancy rates, infrastructure and utilities conditions Use time series analysis (past 10 years), as applicable
Inventory of Katchi Abadis	Provides an inventory showing land area, number of households and population, and quality of infrastructure/services in Katchi Abadis

	Use time series analysis (past 10 years), as applicable
Inventory of resettlement areas	Provides an inventory showing land area, number of families, infrastructure, utilities and community services
Inventory of government- and privately-owned land banks for housing	Provides an inventory of showing land area and potential capacity
Inventory of potential lands for housing	Provides an inventory of lands identified as suitable and available for housing development
Mapped location of existing housing areas (formal and informal), land banks and potential lands for housing	Provides information regarding accessibility in relation to the location and distribution of the population and presence and condition of access roads
2. Housing services	
Housing institutions	Provides an inventory of housing institutions (government, non-government and private) and the services (financing, self-help schemes, etc.) they provide
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as formalisation of settlements, on-site and services improvement, relocation, zoning and building regulations, etc.
4. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could augment and improve the housing stock
5. Current and projected needs	
Enabling policy environment requirements	Provides an indication of what policies and legislation could be initiated to address the issue of housing activities such as regional development, zoning and building regulations, etc.
Current and projected housing needs	Provides information on housing needs based on existing and projected population and national standards, if any[8] Discuss also according to the perceptions of the community, housing providers and other stakeholders

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.34 Type of data, means of data collection and possible sources

Type of data	Means of data collection	Possible sources
Quantitative	Primary	
	Survey	Government and private offices Low income groups
	Secondary	
	Records and reports	Cooperative Housing Authority

[8] Ibid.

	Media review	Katchi Abadis Authority District Office Local Government Non-government organisations Private housing developers Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Cooperative Housing Authority - Katchi Abadis Authority - District Office - Local Government - Non-government organisations - Private Housing Developers
	Physical inspection of facilities	Selected government, non-government and private-housing developments

Summarise findings and observations

The salient findings and observations should be discussed by the LED Steering Committee and LED TWG. These may also be summarised through a SWOT list. It should be noted that the elements to be included in the list should be limited to those that have or will have direct bearing to local economic development.

Table 2.35 Summary SWOT List – Housing Sector

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Housing situation				
Housing services				
Affecting policies				
Major programs and projects				

2.2.6 Environment Sector

The assessment of the Environment Sector covers the attributes of the city's land, air and water resources. Emphasis should be placed on the determination of locations that are suitable and un-suitable for urban development in light of environmental constraints. The quality of both man-made and natural environments should also be assessed as well.

The framework of analysis will revolve around the following:

- Characterisation of the environment and the condition of its various components
- Inventory and assessment of environmentally constrained areas
- Determination of areas suitable for urban development
- Inventory and assessment of the policy environment
- Inventory and assessment of upcoming developments that will likely affect environmental quality
- Determination of current and projected needs in terms of the policies, programs and projects

The assessment could likewise be according to the steps followed in the Economic and Social Sectors. Sample statistical tables are presented in Appendix D.

Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.36 Selected Environment Sector Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Characterisation	
Topography and slope	Provides information on topographic relief, elevation, slope and surface drainage Present topographic, elevation, and slope classification maps and area breakdown
Soil map	Provides information on soil type, classification, suitability, etc. Present soil map and area breakdown
Land cover	Provides information on location of built-up areas, vegetation cover, surface water bodies, etc. Present land cover map and area breakdown
Hydrogeological conditions	Provides information on types of bedrock formation and location of surface waters and groundwater Present hydrogeological map and area breakdown
Mineral resources	Provides information on type and location of mineral resources Present mineral resources map and area breakdown
Freshwater bodies	Provides a general characterisation of lakes, rivers, etc. Provides information on utilisation (tourism, ports, settlements, etc.) and environmental condition Present map of freshwater bodies and area breakdown
Coastal and marine areas	Provides information on general characteristics, lengths, and boundaries, etc. to include fish sanctuaries, coral reefs, mangroves, sea grass beds and the like Provides information on utilisation (tourism, ports, settlements, etc.) and environmental condition Present coastal and marine resources map and area breakdown
Climatological conditions	Provides information on climate type, amount of rainfall, prevailing winds, mean temperature, etc.
Air quality	Provides information of air quality in urban and rural areas
Urban areas	Provides characterisation on the overall quality of the urban environment

2. Environmentally constrained areas	
Protected areas	Provides an inventory of areas declared and required by law such as reserved such as parks, wildlife, wetlands, watersheds, forests, historical and cultural areas, etc. Present reserved areas map and area breakdown
Risk and hazard-prone areas	Provides an inventory of areas prone to environmental risks and hazards such as flood, earthquake, tsunami, subsidence, etc. Present risk and hazard prone areas map and area breakdown
3. Areas suitable for urban development	
Areas suitable for urban development	Provides an inventory of areas that are not classified as Protected and not prone to environmental risks and hazards Present areas suitable for urban development map and area breakdown
4. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sector activities	Provides information regarding the present and future enabling policy environment such as laws, regulations, etc.
5. Major programs and projects in the pipeline	
Related programs and projects which will affect the sector that have been approved for implementation	Provides information on how these could affect environmental conditions
6. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for environmental protection, conservation or enhancement projects	Provides project recommendations based on requirements by laws and regulations and perceptions of the community

Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.37 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey
	Secondary	
	Records and reports Media review	Environment Department Forest Department

		Agriculture Department Livestock and Fisheries Department Mines and Minerals Department Wildlife Department Culture Department Antiquities Department Provincial Disaster Management Office District Offices Local Government Various media sources
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Environment Department - Forest Department - Agriculture Department - Livestock and Fisheries Department - Mines and Minerals Department - Wildlife Department - Culture Department - Antiquities Department - Provincial Disaster Management Office - District Offices
	Physical inspection	Selected locations

Summarise findings and observations

The salient findings and observations should be discussed by the LED Steering Committee and LED TWG. These may also be summarised through a SWOT list. It should be noted that the elements to be included in the list should be limited to those that have or will have direct bearing to local economic development.

Table 2.38 Summary SWOT List – Environment Sector

Themes	Strengths	Weaknesses	Opportunities	Threats
Land				
Hydrogeology				
Freshwater bodies				
Coastal and Marine				
Climate				
Air				
Urban area				
Protected areas				
Risk and hazard prone areas				
Areas suitable for urban development				

2.2.7 Infrastructure

Infrastructure Sector assessment covers public utilities and services and examines these according to service coverage, sufficiency and accessibility to the population. Below is a recommended framework of analysis for the Infrastructure Sector:

- Inventory and status assessment in terms of adequacy, efficiency, sustainability and equity
- Inventory and assessment of the policy environment
- Inventory and assessment of upcoming developments that will likely affect service requirements
- Estimation of current and projected needs in terms of the policy environment and levels of service

The assessment could basically be similar to the steps followed in the preceding sectors. Sample statistical tables are presented in Appendix E.

Water supply and distribution

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.39 Selected Water Supply and Distribution Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Supply and distribution	
Ownership and Management	Provides information on ownership and management arrangements of the water supply and distribution system
Existing potable water supply sources	Provides an inventory of potable water supply sources (groundwater, surface water, etc.), capacities and status Use map presentation
Potential potable water supply sources	Provides an inventory and description of potential potable water supply sources Use map presentation
Potable water distribution system	Provides information on total area covered and number and type of consumers served Use map presentation
Water rates	Provides information on water rates for residential, commercial and industrial services Compare with other cities in the country and province
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, incentives, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy	Provides recommendations to enhance the policy

requirements	environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and consumers

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.40 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Household needs assessment survey
	Secondary	
	Records and reports	Local Government Department Water and Power Development Authority Private service provider, if any Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Local Government Department - Water and Power Development Authority - Private service provider - Local Infrastructure and Services Office
	Physical inspection of facilities	Selected potable water supply and distribution facilities

<u>Drainage and flood control</u>

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.41 Selected Drainage and Flood Control Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Service Coverage	
Ownership and Management	Provides information on ownership and management arrangements of the drainage and flood control system
Existing drainage and flood control system	Provides an inventory as to location, coverage, type, capacities and condition Use map presentation
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, standards, etc.
3. Major programs and projects	

in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.42 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Household needs assessment survey
	Secondary	
	Records and reports	Local Government Department Private service provider Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Local Government Department - Private service provider - Local Infrastructure and Services Office
	Physical inspection of facilities	Selected drainage and flood control facilities

Irrigation

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.43. Selected Irrigation Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Supply and Distribution	
Ownership and Management	Provide information on ownership and management arrangements of the irrigation system
Existing irrigation system	Provides an inventory as to source, location, coverage, type, capacities and condition Use map presentation
Potential sources of irrigation	Provides an inventory and description of potential sources

water	of irrigation water Use map presentation
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, standards, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service provider and users

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.44 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Survey of farm households
	Secondary	
	Records and reports	Irrigation Department Water and Power Development Authority Executive Engineers Local Infrastructure and Service Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Irrigation Department - Water and Power Development Authority - Executive Engineers - Local Infrastructure and Service Office
	Physical inspection of facilities	Selected irrigation facilities

<u>Power generation and distribution</u>

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.45 Selected Power Generation and Distribution Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Supply and distribution	
Ownership and Management	Provides information on ownership and management arrangements of the power generation and distribution system
Existing power supply sources	Provides an inventory of power supply sources (power generating plants, hydro, etc.), capacities and status Use map presentation
Potential power supply sources	Provides an inventory and description of potential power supply sources Use map presentation
Power generation distribution system	Provides information on total area covered and number and type of consumers served Use map presentation
Power rates	Provides information on power rates for residential, commercial and industrial services Compare with other cities in the country, province and internationally
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, incentives, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and consumers

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.46 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources

Quantitative	Primary	
	Surveys	Household needs assessment survey
	Secondary	
	Records and reports	Electric Power Department Water and Power Development Authority Local Electric Corporation Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Electric Power Department - Water and Power Development Authority - Local Electric Corporation - Local Infrastructure and Services Office
	Physical inspection of facilities	Selected power generation and distribution facilities

Information and Communications Technology

Information and Communication Technology services include internet providers, landline and mobile telephone providers, as well as radio and television networks.

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.47 Selected Information and Communications Technology Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Services and facilities	
Ownership and Management	Provides information on ownership and management arrangements of ICT services and facilities
Services and facilities	Provides inventory of ICT services and facilities and service coverage by type Use map presentation
Landline based telephone system	Provides information on area coverage and number of subscribers Provides information on subscription rates and compare these locally and internationally
Internet services	Provides information on area coverage and number of subscribers Provides information on subscription rates and compares these locally and internationally
Mobile phone services	Provides information on area coverage and number of subscribers Provides information on subscription rates and compares these locally and internationally
2. Affecting policies	
Inventory of national, provincial	Provides information regarding the present and future

and local policies that directly and will directly affect sub-sector activities	enabling policy environment such as regulations, incentives, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and consumers

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.48 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Household needs assessment survey
	Secondary	
	Records and reports	Information Technology Department ICT Service Providers Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Information Technology Department - ICT Service Providers - Local Infrastructure and Services Office

Sewage collection and disposal

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.49 Selected Sewage Collection and Disposal Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Service Coverage	
Ownership and Management	Provides information on ownership and management arrangements of the sewage collection and disposal system
Existing sewage collection and system	Provides inventory as to location, coverage, type, capacities and condition

	Use map presentation
Service rates	Provides information on service rates and compare locally and internationally
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, standards, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.50 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Household needs assessment survey
	Secondary	
	Records and reports	Local Government Department Environment Department Private service provider, if any Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Local Government Department - Environment Department - Private service provider, if any - Local Infrastructure and Services Office
	Physical inspection of facilities	Selected sewage collection and disposal facilities

<u>Solid waste management</u>

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.51 Selected Solid Waste Management Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Service Coverage	
Ownership and Management	Provide information on ownership and management arrangements of the waste management system
Type and volume of waste generated	Provides information regarding municipal and other related waste
Existing solid waste management system	Provides an inventory as to coverage, type, capacities, disposal system and condition and its efficiency Use map presentation
Service rates	Provides information on service rates and compare locally and internationally
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, standards, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.52 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Waste generation and characterisation survey
	Secondary	
	Records and reports	Local Government Department Environment Department Private service provider, if any Local Infrastructure and Services Office
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Local Government Department - Environment Department

		- Private service provider, if any - Local Infrastructure and Services Office
	Physical inspection of facilities	Selected solid waste management facilities

Toxic and hazardous waste management

- Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.53 Selected Toxic and Hazardous Waste Management Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Service Coverage	
Ownership and Management	Provide information on ownership and management arrangements of the waste management system
Type and volume of waste generated	Provides information regarding industrial, hospital and other related waste
Existing toxic and hazardous management system	Provides an inventory as to coverage, type, capacities, disposal system and condition and its efficiency Use map presentation
Service rates	Provides information on service rates and compare locally and internationally
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sub-sector activities	Provides information regarding the present and future enabling policy environment such as regulations, standards, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the present level of service
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for system improvement and/ or expansion	Provides recommendations based on existing and projected population and standards and directives, if any Present also according to the perceptions of service providers and the community

- Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.54 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Toxic and hazardous waste characterisation survey
	Secondary	
	Records and reports	Environment Department Private service provider, if any Local Infrastructure and Services Office Hospitals Industrial Establishments
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Environment Department - Private service provider, if any - Local Infrastructure and Services Office - Hospitals - Industrial Establishments
	Physical inspection of facilities	Selected toxic and hazardous waste management facilities to include government and private hospitals

<u>Summarise findings and observations</u>

The salient findings and observations should be discussed by the LED Steering Committee and LED TWG. These may also be summarised through a SWOT list. It should be noted that the elements to be included in the list should be limited to those that have or will have direct bearing to local economic development.

Table 2.55 Summary SWOT List – Infrastructure Sector

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Water Supply and Distribution				
Drainage and Flood Control				
Irrigation				
Power Supply and Distribution				
Information and Communications Technology				
Sewage Collection and Disposal				
Solid Waste Management				
Toxic and Hazardous Waste Management				

2.2.8 Governance

The assessment of the Governance mechanism focuses on the planning and implementation capability of the local government and is not intended to be a full management review. Emphasis should be placed on the assessment of the staff and organisational competencies at the executive level in relation to master planning and implementation.

The city government's financial situation should also be assessed in terms of its capacity to implement short-term programs and projects. This will be complemented by an inventory of possible co-financing schemes which may be implemented by the city government with the private sector, non-government organisations or other development partners.

An inventory and assessment of master plan-oriented national and local legislation should also be undertaken. Much of this work would have already been accomplished at the preceding sectors and these should be pulled together to obtain a holistic view of the legislative and policy environment.

The assessment may be guided by the following framework:

- Assessment of the city government's master planning and implementation capability
- Assessment of the city government's financial resources
- Assessment of the policy environment

The assessment could basically be similar to the steps followed in the preceding sectors. Sample statistical tables are presented in Appendix F.

Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.56 Selected Governance Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Planning and implementation capability	
Master planning and implementation actors	Provides information on the key departments involved in master planning and implementation, organogram and personnel complement Provides information regarding their roles in master planning and implementation Provides actual functions performed by the identified departments
Networks within the local government	Provides information on accessibility to and level of support provided by the these departments to the Mayor, Chief Executive and Council in terms of master planning and implementation concerns Provides information on the functional relationships of these offices in terms of master planning and implementation concerns
Networks outside the local government	Provides information on the formal arrangements of the city government with external government agencies/

	bodies in terms of project identification and implementation Provides information on the formal arrangements of the city government with non-government organisations and the private sector in terms of project identification and implementation Provides information on the type of participation of Union Councils in planning and implementation
Local council	Provides an inventory of master plan-oriented legislation passed by the local council
2. Financial resources	
Income statement	Provides information on the city government's revenues and expenditures (past 5 years) Provides information on the top sources of revenues (past 5 years) Provides information on the city government's internal capacity to finance capital projects Provides information on the city government's borrowing capacity
Capital improvement plans	Provides a review of accomplishment of programmed capital projects
Fund transfers	Provides information on the amount of funds that have been transferred from other tiers of government (such as provincial) and calculates its share to total city revenue (past 5 years)
3. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sector activities	Provides information regarding the present and future enabling policy environment such as laws, regulations, etc.
4. Major programs and projects in the pipeline	
Related programs and projects which will affect the sub-sector that have been approved for implementation	Provides information on how these could affect the city government's present governance and financial capabilities
5. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for improvement	Provides recommendations based on the perceptions of city government's executive and legislative branches as well as the community stakeholders

<u>Determine means of data collection and possible sources</u>

The plan on how to obtain information requirements may be guided by the following table:

Table 2.57 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Secondary	
	Records and reports	Local Government Department Finance Department Local Chief Executive Local Government
Qualitative	Primary	
	Focus group discussions Key informant interviews	Key representatives from: - Local Government Department - Finance Department - City Mayor - Local Government - Local Finance Office

Summarise findings and observations

The salient findings and observations should be discussed by the LED Steering Committee and LED TWG. These may also be summarised through a SWOT list. It should be noted that the elements to be included in the list should be limited to those that have or will have direct bearing to local economic development.

Table 2.58 Summary SWOT List – Governance Sector

Sub-sector	Strengths	Weaknesses	Opportunities	Threats
Planning actors				
Networks within the local government				
Local council				
Financial resources				

2.3 SPATIAL ASSESSMENT

2.3.1 Land Use and Transportation

The findings and observations gathered from the preceding activity should be pulled together to form an integrated assessment of the city's spatial growth pattern. Land use and transportation concerns should be taken unitarily due to their close inter-relationship. The assessment will revolve around tracking and anticipating the land use and transportation patterns which shall be framed against a demand-supply analysis for urban land.

The assessment could likewise be according to the steps followed in the preceding sectors. Sample statistical tables are presented in Appendix G.

Prepare a plan for data collection, processing and analysis

The following table provides a guide to data collection, processing and analysis:

Table 2.59. Selected Land Use and Transportation Information

Basic Information	Guide to Data Collection, Processing and Analysis
1. Characterisation	
Functional role of the city	Provides information on the role of the city at the provincial/ national contexts (transport hub, industrial centre, etc.)
Administrative boundaries	Provides information on boundaries of the district, city and Urban Councils Present administrative boundary map and area breakdown
Land classification	Provides information on location of government land (by category), private land, cantonment, etc. Present land classification map and area breakdown
Historical spatial growth pattern	Provides historical urban growth trend information Present in map form using data as far back as possible
Existing land use	Provides information on existing land use pattern showing indicative locations of industrial, commercial, residential and peri-urban areas Provides information on road network pattern and salient features of the transportation system such as major terminals, intersections, etc. Present existing land use pattern map
Prevailing land use plan/ zoning map	Provides information regarding prevailing zone regulations Present in map form
Land values	Provides information on market values in selected locations
Urban environment	Provides information on the quality of the urban environment to include quality of urban design, walkability, energy efficiency, accessibility of open spaces, pollution levels, etc.
Modes of transportation	Provides an inventory and describes the conditions of available modes of transportation such as road, rail, sea or air
Road network	Provides an inventory of roads by hierarchy and physical conditions Provides a discussion on circulation and accessibility within the city and to/ from adjoining areas and major urban centres Provides discussion on vehicular traffic prone locations as well as flood prone locations Present road network map and area breakdown per road hierarchy
Road capacity	Provides information on road capacity, traffic volume and levels of service at critical locations
Ancillary road facilities	Provides information regarding presence and adequacy of

	sidewalks, pedestrian crossings, overpasses, traffic lights, etc. Provide ancillary road facilities map and photo information
Transportation terminals	Provides an inventory and conditions of transportation terminals to include those for local, regional and international transport, as applicable Present transportation terminals map
Anticipated spatial growth pattern	Provides information regarding anticipated manner and direction of urban growth over the planning period Present in map with diagrams
2. Affecting policies	
Inventory of national, provincial and local policies that directly and will directly affect sector activities	Provides information regarding the present and future enabling policy environment such as laws, zoning and building regulations, etc.
3. Major programs and projects in the pipeline	
Related programs and projects which will affect the sector that have been approved for implementation	Provides information on how these could affect land use and transportation development
4. Current and projected needs	
Current and projected policy requirements	Provides recommendations to enhance the policy environment in terms of laws and regulations
Current and projected needs for improvement and/ or expansion	Provide estimates based on existing and projected population according to standards and directives, if any Present also according to the perceptions of local government land use and transport regulators, private land developers and the business community

Determine means of data collection and possible sources

The plan on how to obtain information requirements may be guided by the following table:

Table 2.60 Type of data, means of data collection and possible sources

Type of Data	Means of Data Collection	Possible Sources
Quantitative	Primary	
	Surveys	Land use survey Traffic survey
	Secondary	
	Records and reports	Local Government Department Planning and Development Department Sindh Building Control Authority Transport Department Local Government
Qualitative	Primary	
	Focus group discussions	Key representatives from:

	Key informant interviews	- Local Government Department - Planning and Development Department - Sindh Building Control Authority - Transport Department - Local Government - Private developers - Transport operators - Industry associations
	Physical inspection of facilities	Selected locations in the city

<u>Summarise findings and observations</u>

One of the major points of analysis is the determination of the "available supply for urban land" and the "projected demand." Supply is a result of sieve mapping analysis and is the vacant area left after deducting the existing built-up area, committed areas for development, notified areas, environmentally constrained areas from the total planning area (urban area plus peri-urban area). Demand is an estimate of the required urban area considering anticipated population growth which is initially considered in horizontal terms. It roughly illustrates the extent of built-up area expansion over the planning period. It can be approximated using standard ratios[9] or by determining the density of built-up areas and projecting this over the planning period. Demand estimates can also be used as basis in delineating the peri-urban area.[10]

A demand-supply balancing model is presented in the figure below:[11]

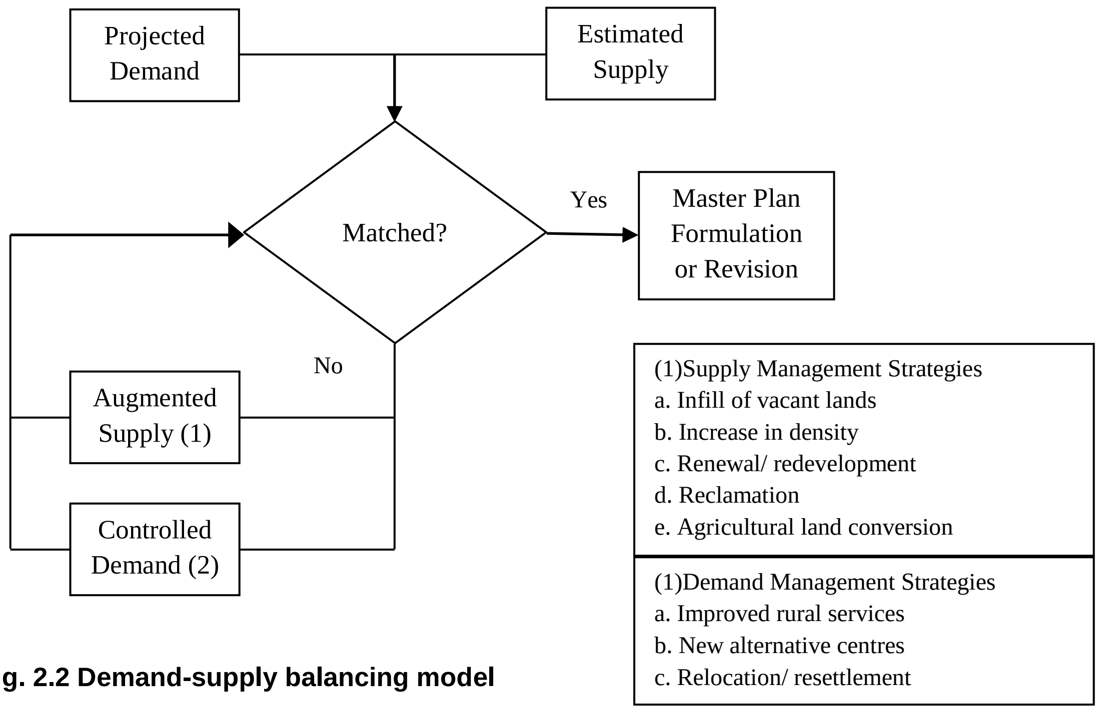

Fig. 2.2 Demand-supply balancing model

[9] Such as those provided in the National Reference Manual
[10] A parallel estimate of demand can also be undertaken for agricultural and livestock and fisheries areas if food sufficiency levels are being targeted. Such an estimate may be done by correlating per capita food requirements of specified agricultural products to production levels per area of land.
[11] Rationalised Planning System, Department of Interior & Local Government, Philippines, 2006

Comparing supply with demand does not give absolute decision points but is a useful starting point to develop spatial strategies such as demand management (resettlement, rural development, etc.) or supply augmentation (in-filling, densification, expansion of city limits, reclamation, etc.) strategies.

2.4 INTEGRATED SWOT ASSESSMENT

The Integrated SWOT Assessment will provide the platform in the formulation of subsequent spatial development strategies. The elements in the individual sectoral SWOT Assessments that were done at the Initial Assessment stage should be consolidated at this stage. An integrated SWOT Assessment Matrix will provide a composite picture of the internal and external forces affecting the city's spatial growth. An example of this matrix is illustrated below:

Table 2.61 Sample integrated SWOT Assessment Matrix

	Strengths	**Weaknesses**
INTERNAL	• Demography • Economic • Social Services • Housing • Environment • Infrastructure • Governance • Land Use & Transportation	• Demography • Economic • Social Services • Housing • Environment • Infrastructure • Governance • Land Use & Transportation
	Opportunities	**Threats**
EXTERNAL	• Demography • Economic • Social Services • Housing • Environment • Infrastructure • Governance • Land Use & Transportation	• Demography • Economic • Social Services • Housing • Environment • Infrastructure • Governance • Land Use & Transportation

Each strength, weakness, opportunity and threat should be re-evaluated and prioritised in order to cull-out the critical issues. Examples of prioritisation criteria include the following, amongst others:[12]

- For internal factors
  - Is the strength/weakness an emerging, existing, temporary or declining trend?
  - For how long will the strength/weakness have an impact and when will this occur?
  - Will the impact of the strength/weakness be significant or insignificant?
  - Is it possible to control the impact of the strength/weakness?

- For external factors
  - Is the opportunity/threat an emerging, existing, temporary or declining trend?
  - For how long will the opportunity/threat have an impact and when will this occur?

[12] Ibid.

- Will the impact of the opportunity/threat be significant or insignificant?
- Is it possible to control the impact of the opportunity/threat?

Those at the top of the list are the critical issues which should be the focus of the spatial strategy. It is recommended that these be limited in number in order to arrive at a strategy that is focused and more implementable.

This integration stage should be done with the Stakeholder Group composed of no more than 60 members. This may be done through a workshop to be facilitated either by the Master Plan TWG or by a consultant.

SECTION 3 – MASTER PLAN STRATEGY PREPARATION

This section presents the process in developing the Master Plan strategy based on the spatial and SWOT assessments. Anchored on a Vision, the strategy focuses on spatial concerns and all other development sectors such as economic, social services, housing, etc. are considered contributory to it. The strategy culminates on the specification of land use policies and a set of programs and projects necessary to support the Master Plan. A diagram showing the spatial strategy process is presented below.

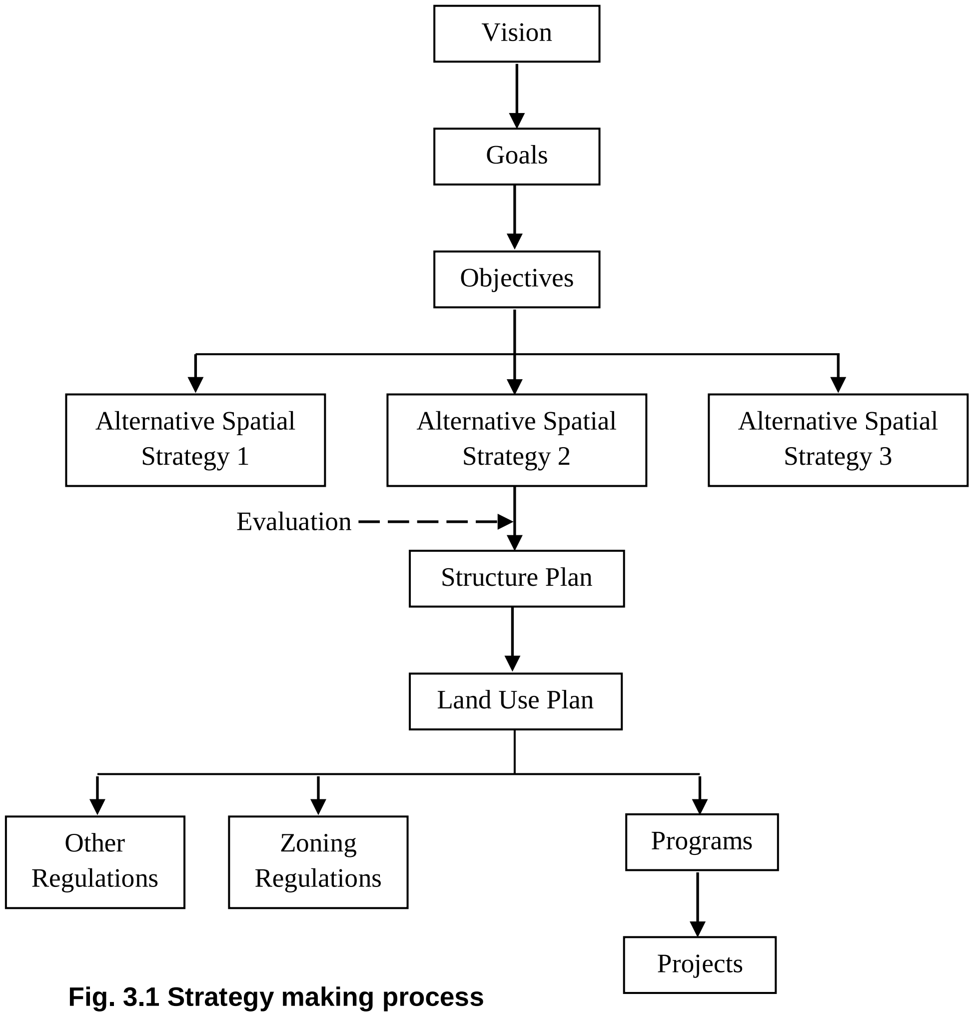

Fig. 3.1 Strategy making process

3.1 ESTABLISH VISION, GOALS AND OBJECTIVES

3.1.1 Spatial Development Vision

A vision is defined as "a description of the stakeholders' preferred economic future for the community, that is, where the city wishes to be in the future. It is intended to achieve the following: "[13]

- Give an idea of the desired future of the city
- Makes clear the shared valued and guiding principles of the Master Plan Strategy

[13] LED Primer

- Provide a reference point to keep stakeholders (and the community) focused on key issues
- Inform and guide long term decisions

The Master Plan Vision should be formulated within the term of the Master Plan Strategy, i.e., ten years. It should be anchored on the spatial and SWOT assessment and formulated through stakeholder participation. Such participation is essential to facilitate stakeholders' "ownership" of the vision to sustain their support during plan implementation. This may be done through a single workshop session with participation of the Master Plan Steering Committee, Master Plan TWG, and the extended Stakeholders Group where consensus and commitments are made. Consultation may also be done through a series of presentations and discussions with various stakeholder groups, such as with the Chamber of Commerce and informal sector associations, and then summarising the results. The approaches will vary depending on the depth of consultations preferred by the Master Plan Steering Committee.

The final vision statement should be short, clear, inspiring, powerful and compelling. The Vision serves as the basis from which succeeding goals, objectives, spatial strategies as well as programs and projects will be developed. It is also the "guiding post" by which actions below it are identified. Conversely, projects, programs, spatial strategies, objectives and goals should be ensured to be contributory towards the attainment of the vision.

3.1.2 Goals and Objectives

Goals

Goals are broad statements of desired outcomes in response to the Vision. Goals bring the vision down into more concrete terms and should also be able to address the critical issues identified in the SWOT assessment. They should have short to long-term orientations following the period of Master Plan implementation. To achieve a strategic plan, it has to be ensured that goals are focused towards spatial development and its number limited to six.

Objectives

Objectives are formulated in response to each Goal and break each Goal down into more manageable components. Objectives are crafted in more specific terms and set the standards and targets of the Master Plan Strategy. This is one of the critical points where the success of the strategy will be measured during the Monitoring and Evaluation stage. The widely accepted nature of objectives is that these should be SMART – specific, measurable, attainable, realistic and time-bound.

As in the Vision, Goals and Objectives should be developed with stakeholder participation. The relationship of the Vision, Goals and Objectives is illustrated in the table below:

Table 3.1 Example Master Plan Vision, Objectives and Goals

Vision	Goals	Objectives
By 2020, our city shall be the trading centre of the province where citizens live in vibrant and peaceful communities.	To be a major industrial and service hub of the province	To modernise existing seaport facilities by 2015
		To establish a free-trade zone by 2020
	To have a renewed and vibrant city centre	To undertake urban renewal schemes at the city centre by 2015
		To put in place development controls for historic sites and buildings

3.2 PREPARE & EVALUATE ALTERNATIVE SPATIAL DEVELOPMENT STRATEGIES

3.2.1 Generate Alternative Strategies

Alternative spatial development strategies should be developed to allow planners the benefit of choice. It is recommended that these alternatives be generated with the Stakeholder Group using participatory techniques such as charrette. Each alternative should be provided with a concept plan accompanied by a briefly written justification. The number of alternatives should also be managed and three concept plans will normally be a good number. The alternatives may be developed through the following:

- Base scenario

A future scenario may be drawn assuming that prevailing spatial development patterns are allowed to continue while attempting to meet the goals and objectives of the strategy. This may be exemplified by allowing the pattern of linear sprawl and leap-frogging development to continue.

- Alternatives to the base scenario

Taking reference to the vision, goals and objectives, alternative scenarios may be portrayed based on, say the observations gathered from the demand-supply analysis. For example, an observation which indicates a low supply of urban land may lead to a scenario of encouraging high densities in certain parts of the city or allowing large scale agricultural land re-classification. These may be matched by adaptations of urban forms based on circulation patterns such as concentric, radial, grid-iron, etc.

3.2.2 Evaluation of Alternative Strategies

While there are several evaluation tools that are available[14], the goals achievement matrix (GAM) is the most commonly used because it can easily be understood by stakeholder participants, suitable for multi-objective evaluation and is highly participatory in application. GAM allows the measurement of an alternatives'

[14] Other tools include Cost-Benefit Analysis, Planning Balance Sheets, as well as computer-based models.

contribution to a give objective through a rating scale. A sample GAM is shown below.

Table 3.2 Sample goals achievement matrix

Objectives	**Weight (%)**	**Alternative Strategies**			
		1	**2**	**3**	**Etc.**
To modernise existing seaport facilities by 2015					
To establish a free-trade zone by 2020					
To create a revitalised urban centre by 2015					
To put in place development controls for historic sites and buildings					
Total	**100**				

The alternative with the highest rated score will become the selected strategy. It may also be possible that the strong points of the other alternatives will be incorporated into the final version creating an amalgamated version.

3.3 DETAILING OF PREFERRED SPATIAL DEVELOPMENT STRATEGY

3.3.1 Prepare Structure Plan

The preferred alternative should be detailed into a Structure Plan. This is defined as "a statement of priorities, plans and programs supported by a Key Diagram, a schematic illustration of the spatial implications of the policy proposals." Covering both urban and peri-urban areas, the Structure Plan provides broad policy objectives indicating the desired manner and magnitude of physical growth for key locations which may be grouped according to the following:

- Settlement Areas or "spaces for living "comprising the residential areas, community facilities and traditional city centre

- Production Areas or "spaces for making a living" comprising commercial, industrial, tourism, agricultural, livestock and fisheries, and similar areas.

- Protection Areas comprising those that should be deliberately left open and/ or preserved because of their environmental, historical and amenity values such as protected forests, buffer zones, parks, lakes, rivers, historical sites and other open spaces.

- Major Infrastructure which provides the linkages and services to the various areas such as roads, ports, transportation terminals, water supply, power supply and other similar infrastructure.

3.3.2 Prepare Land Use Plan

<u>Land use classification</u>

A more detailed Land Use Plan should then be prepared which will divide the city into various land use zones such as residential, commercial, industrial, etc. based on the policies elucidated in the Structure Plan. Covering both urban and peri-urban areas, these land use zones should be provided with more detailed policy objectives such as pertaining to development intent, allowed uses and land use intensities. A land use classification map accompanied by a land use classification table should be prepared. An example of a land use classification table is presented below.

Table 3.3 Sample land use classification table

Land Use Classification	**Area**	**% to Total**
Residential		
Commercial		
Parks and Playgrounds		
Institutional		
Manufacturing		
Utilities and Municipal Service Facilities		
Agriculture		
Forestry		
Mines and Quarries		
Salt Pans		
Water Body		
Notified Area		
Others		
Total		**100**

The major land use classes identified above may further be detailed into several sub-classes such as low, medium and high density residential, or light, medium and high-intensity commercial uses.

Table 3.4 Sample land use sub-classification table (residential)

Land Use Classification	**Area**	**% to Total Residential Area**
Low Density Residential		
Medium Density Residential		
High Density Residential		
Others		
Total		**100**

<u>Segregated and Mixed-use Classifications</u>

It is advisable to use a classification system which combines the traditional way of segregating uses and one which allows mixed-use developments. There will be areas where single and segregated uses are desirable, such as in gated residential communities where the objective is to maintain the status quo or in heavy industrial areas where other uses should not be allowed for safety and health reasons.

In turn, there will be areas where mixed uses are the norm such as there is a juxtaposition of houses, stores, places of worship, small businesses, etc. all of which contribute to a neighbourhood's vibrant existence. Or there will be areas characterised by residential condominium and office buildings sitting beside a park, shopping mall or even a place of worship. These are also complete neighbourhood elements, albeit with more intense land use intensities, and it is recommended that a mixed-use classification system is applied in such cases. It should be noted that the identification of allowed uses within a contiguously mixed-use area be done selectively to minimise the possibility of creating nuisance effects such as unduly increasing traffic, noise or pollution levels.

Land Use Policies

Land use policies provide the basis on the manner with which land may be used and developed per classification. Policies should be clear with regards to the intended overall character of development, what uses should be allowed, what may be allowed under certain conditions and the levels of land use intensity. Some examples of policy statements are shown below:

- Residential

Residential areas form the majority of land uses in the city. As a general policy, these residential areas should be developed with accessible community facilities such as with neighbourhood scale parks and recreation, convenience stores, places of worship and similar uses. Residential areas area categorised according to the following:

- Low density residential

These areas are intended for low-rise sprawling developments with ample landscaped ground open spaces. Low-density residential areas comprise the existing and proposed locations of residential gated communities. Neighbourhood-scale community facilities and amenities such as small retail stores, groceries, parks, playgrounds, nursery schools, etc. along with small professional business offices such as medical clinics, dental clinics, law offices, etc. may also be allowed in these areas at designated locations.

- Medium density residential

Medium-density residential areas are found in the following locations: [enumerate locations] and where multiple dwelling units such as townhouses, apartments, medium-rise housing and the like are encouraged. Neighbourhood-scale community facilities, amenities and professional business offices, similar to those in Low density residential areas, may also be allowed in Medium density residential areas.

- Commercial

- Central business district

Comprising the city centre, the CBD shall be the premiere commercial area of the city. Developments shall be characterised by mixed-use and high intensity uses, but predominantly commercial uses. Buildings having ground level commercial establishments and upper-level residential or office units are encouraged.

- Commercial corridors

Commercial corridors are found along the major arteries of the city such as [enumerate major arteries]. These areas are intended for predominantly commercial uses having high land use intensities due to the presence of access infrastructure. Proposed developments should, however, provide the necessary road right-of-way easements due to programmed road widening schemes.

3.3.3 Link to zoning and other related regulations

The Structure Plan and Land Use Plan provide the major basis in the preparation of zoning regulations where policies will be interpreted and detailed. Other supportive regulations, such as providing a notification on urban renewal areas or of designated new housing sites, will also emanate from the policies enunciated in the Structure Plan and Land Use Plan.

3.4 IDENTIFY PROGRAMS AND PROJECTS

3.4.1 Programs

A program is a set of actions which seek to achieve an objective and the corresponding goal and will comprise short and long-term projects. There will most likely be many proposed programs that will be initially identified to address the various objectives of the Master Plan. These should be carefully assessed and the numbers brought down into manageable terms, six being the recommended maximum. There are several criteria which may be used in selecting the appropriate programs, some of which are:[15]

- The significance of the expected benefits and impacts
- The ability to address the most important goals and objectives
- The ability to build on and enhance the competitiveness of the city
- The availability of resources needed to implement the program
- The presence of stakeholder support
- The city government's organisational and financial capability
- The ability to complement other programs

Examples of Master Plan oriented programs, and their relationships to objectives, are shown below:[16]

Table 3.5 Programs in response to Objectives

Objectives	Programs
To establish a free-trade zone by 2020	Port modernisation program
	Accessibility enhancement program
To create a revitalised urban centre by 2015	Public space improvement program
	Heritage conservation program

Programs should be grouped according to the sectoral divisions made at the Spatial Assessment stage.

[15] LED Manual
[16] Ibid.

3.4.2 Projects

A project is "a well-defined activity that has clear objectives and purpose, is viable, realistic and has measurable or observable impacts and outputs."[17] A set of projects should be identified for each program with attention given to the desired outputs indicated in the objectives. As in objectives, projects should also be SMART.

There will also be a host of project ideas per program that will be identified. Again, it is important that these be assessed and prioritised to achieve a strategic plan with manageable targets. A set of qualitative criteria could be employed particularly if quick decisions have to be made. Some of these criteria are shown below:

- Degree of contribution to the achievement of the specific program's objective
- Potential to contribute to the achievement of several objectives
- Immediacy of generating the desired results
- Level of needed pre-conditions (site acquisition, change in regulations, etc.)
- Can be implemented with available financial resources
- Can be implemented with the available organisational and management skills in the city government
- Presence of stakeholder support

Projects that can easily and quickly be implemented and having visible impacts should be prioritised. These are essential to "jumpstart" Master Plan implementation and garner support from stakeholders. Moreover, whilst project identification is initiated per program, there will be cross-cutting ones or those having the ability to positively impact several objectives. These ones should also be prioritised since they provide economies of scale.

Projects that are complex, say in terms of possible socio-economic and environmental impacts or with significant investment requirements may have to be assessed through more quantitative and detailed measures such as feasibility studies and cost-benefit analyses. These studies may also require substantial amount of resources and may be considered as distinct projects by themselves.

Examples of Master Plan oriented projects, and their relationships to programs, are shown below:[18]

Table 3.6 Projects in response to Programs

Programs	Projects
Port modernisation program	Expansion of cargo terminal to increase its capacity by 50% by year 2020
	Construction of new passenger terminal building by 2019
Accessibility enhancement program	Construction of 8 kilometre access road by 2018
	Completion of 8 kilometres coastal road by 2019
Public space improvement program	Improvement of 500m sidewalk pavement and landscaping by 2020
	Installation of 50 streetlights at the city centre by

[17] Ibid.
[18] Ibid.

	2018
Heritage conservation program	Renovation of the historic park at the city centre by 2018
	Renovation of 5 heritage houses by 2018

SECTION 4 – MASTER PLAN IMPLEMENTATION

The Master Plan will be implemented in two ways, namely (1) through regulatory mechanisms; and (2) through programs and projects. Moreover, the stakeholder inclusion strategy that was developed at the start will most likely have to be refined in light of the requirements of the chosen Master Plan strategy.

4.1 PREPARE AN INVENTORY OF NEEDED REGULATIONS

This will include the Zoning Regulations, the preparation of which is covered in a separate guidelines. An inventory of other regulations needed to support Master Plan implementation will have to be developed and programmed for preparation. Some of these regulations may include:

- Local Environment Code
- Hotel and Resort Code
- Notification of Urban Renewal Areas
- Agricultural Land Preservation Code

4.2 PREPARE INVESTMENT PROGRAM

4.2.1 Prepare Project Action Plans

Implementation planning for the infrastructure component of the Master Plan starts with the preparation of Project Action Plans (PAP). These provide respective details for each project such as:[19]

- Project description which includes purpose and project management and implementation mechanism
- Expected results which are related to the Goals and Objectives
- Identification of target groups or those who will benefit from the Project
- Possible Stakeholders and their possible contributions to the Project:
- Pre-requisites for Project implementation
- Risk factors which may hinder successful Project implementation
- Estimated costs and source(s) of funds
- Time for implementation
- Expected time to impact upon which the project may be evaluated
- Outputs which are measurable targets related to the Objectives

A prototype PAP table is presented in the following table:[20]

Table 4.1. Prototype Project Action Plan

Project: # 6 **Construction of 8 kilometre access road by 2018**	**Program Type(s):** **Accessibility Enhancement Program**
Short Description of the Project:	
Expected Results :	Target Group(s):

[19] Culled from a sample Project Action Plan, LED Manual
[20] Modified from LED Manual

Possible Stakeholders:	Possible Contributions to the Project:
Prerequisites:	Risk Factors
Estimated Costs:	Source(s) of funds
Time for Implementation:	Time to Impact:
Outputs:	

4.2.2 Prepare Financing Plan

The sources of funds for implementation should be identified. There will be projects that will entirely be funded by the city government out of its regular budget such as those that it is mandated to provide, such as public drainage. There are also those that could be funded by other government agencies such as regional roads. There are, however, possible sources aside from government such as local banks, international funding agencies and the private sector which have to be considered in preparing the Financing Plan. An inventory of possible financial sources is provided below:[21]

- Financial resources available to the city government
  - General revenues from taxes and transfers
  - Private equity (private investor funds) for public-private partnerships for land acquisition, site development, building renovation, or downtown renovation
  - Private equity (private company investments or contracts) for improvements to public infrastructure (public-private partnership) through: build-own-operate projects, long term lease arrangements, and management contracts whereby investor makes needed capital improvements
  - Debt financing from private banks for infrastructure construction, land preparation
  - Debt financing from international lenders (World Bank, European Bank for Reconstruction and Development, European Investment Bank) for infrastructure, roads, transport, ports
  - Sale or lease of local government-owned industrial or commercial properties
  - Special local fees such as development fees or building permits, user charges for utilities that are targeted for utility improvements or for Master Plan improvements

- Examples of financing from other tiers of government
  - Education and Literacy Department: Secondary school programs, university faculties and polytechnics

[21] LED Manual

- Industries and Commerce Department: SME loan funds, SME training projects, SME advice centre, micro lending fund capitalization, loans to targeted industries or clusters
- Labour Department: Skills training projects, job match projects, programs for unemployed
- Ministry of Housing and Works: Direct construction of major infrastructure
- National special purpose grants such as industrial parks development

• International sources of funds

  - Donor support for energy efficiency projects for industry expansion
  - Asian Development Bank/ World Bank/International Monetary Funds' SME projects (these funds may be channelled either through government agencies, or be given as grants to private non-profit agencies to administer programs)
  - Donor agency grants for specific projects (usually through non-profit agencies)

• Private sources of funds

  - Private business financing for activities such as training, research contracts to universities, consulting
  - Private foundation or institute grants and financing to local not for profit organisations and institutions for research, training, project implementation
  - Private membership organisations such as a chamber of commerce
  - Business associations, unions
  - Private business investment

4.2.3 Prepare Integrated Investment Program

The PAPs should be pulled together to form an Integrated Investment Program (IIP). This summarises the PAPs and provides consolidated information on project costs, fund sources, implementation partners, timelines and targeted groups and beneficiaries. A sample format of the IIP is shown below:

Table XX. Sample format of Integrated Investment Program

No.	Project Name	Cost	Funding Source (%)				Implementing Partners	Implementation Schedule		Target Groups/ Beneficiaries
			City Govt	Provincial Govt	Donors	Private Sector		Start	End	

Source: Adopted from LED Manual

4.3 BUILD INSTITUTIONAL FRAMEWORKS

4.3.1 City Government Procedures and Processes

Master Plan implementation is a cross-departmental concern inasmuch as the identified programs, projects and regulations will become responsibilities of various units of the city government. It may be that certain procedures and processes within the city government may have to be modified particularly in respect to the co-ordination and harmonisation of programs and projects. For instance, there may be requirements for regular co-ordination meetings between the local planning office and the various departments of the city government or having the initial draft of the Annual Development Plan reviewed through a planning workshop with consideration to the Master Plan.

At this stage of the planning process, it is thus important to lay down the institutional arrangements needed for successful Master Plan implementation.

4.3.2 Other Stakeholders

Formal Links

There will also be programs, projects and regulations that need to be co-ordinated and harmonised with those of other government agencies, such as the Sindh Building Control Authority, and private sector groups. Examples would be provincial-scale projects such as inter-city expressways and public telephone lines to be laid out by the private telephone company. Or there may be project proposals from informal sector groups to enhance their business activities in the downtown areas. The local planning office should ensure that a mechanism is in place to ensure that these actions are harmonised and be contributory to the Master Plan's goals and objectives.

Regular co-ordination meetings between these the local planning office and these groups is a means to institutionalise the strategy's implementation.

Informal Links

Building-up informal links is also a good strategy for Master Plan implementation. The local planning office may form a network with informal sector organisations which may lead to self-help housing improvements and business mentoring arrangements. This may be achieved informally by simple and occasional visits, or "keeping the doors open" to such organisations.

4.4 PREPARE COMMUNICATIONS PLAN

The Master Plan has to be well-communicated to the stakeholders in order to gain sustained support. The communications plan should target decision-makers, policy-makers, strategy implementers, stakeholders and the public at large. There should be a means of disseminating information as well as means of soliciting feedback. Following are some recommended components of a communications plan:[22]

[22] Ibid.

- Regular channels of reporting on the strategy, including regular stakeholder and committee meetings, internal reports such as quarterly reports, annual reports
- Formal and institutionalised reporting structures between project managers, implementing organisations, and coordinating organisation and project stakeholders
- Means to communicate with external bodies, agencies and individuals including the Mayor and city council, and other supervising bodies
- Means to directly communicate with key stakeholders
- Means to inform the public at large and solicit feedback through public hearings, focus groups, regular newspaper stories, radio and television interviews, reports, and annual reports.

SECTION 5 – MASTER PLAN REVIEW

There are two activities involved in reviewing the Master Plan. First is monitoring which is a continuous assessment of progress made in the course of strategy implementation. Monitoring is concerned with meeting timelines, efficiency in the use of resources, appropriateness of processes and procedures and other quantitative measures. It is intended to identify problems in implementation and provide solutions at early stages. The second activity is evaluation which is a periodic assessment of the strategy's relevance, performance, efficiency and impact. It seeks to measure whether the objectives and the overall desired outcome are being met. Evaluation will rely on both quantitative (such as from monitoring reports) and qualitative (such as focus group discussions and key informant interviews) inputs.

Monitoring is done at the project level and at relatively closer intervals, depending on individual project design. Consolidated monitoring reports covering all programs and projects could, however, be prepared on an annual basis. Evaluation, on the other hand, may be done at the mid-term of the Master Plan implementation, at the end-term and several years after considering a gestating period for desired outcomes to occur.

Findings of monitoring and evaluation studies could lead to recommendations for changes in processes or allocation of resources in order to enable the actions to meet the objectives. On a broader scale, these may lead to recommendations to change the vision, goals and objectives themselves, or practically call for a Master Plan, in light of significantly changed circumstances. It is highly recommended that stakeholders be consulted in during these activities to sustain their support.

5.1 STRATEGY REVIEW FRAMEWORK

5.1.1 Integration with Master Planning Process

The preparation of the M & E planning and implementation process should be made integral to the Master Planning process. The following table shows the points of convergence between the two processes.

Table 5.1. Integrating the M & E System into the LEDS Process

5 Stages of the Master Planning Strategy Process	5 Steps to a Master Plan M&E System	Convergence
Stage 1: Organising the Effort	Step 1: Getting Started	Preparing for M & E system planning in coordination with that of the Master Plan process
Stage 2: Spatial Assessment	Step 2: Select Indicators and Collect Baseline Information	Coordination between planning and M & E information
Stage 3: Master Plan Strategy Preparation	Step 3: Determine Outcomes and Finalise Indicators	Ensure that desired outcomes could be subjected to M & E and if additional baseline information for M & E have to be obtained
Stage 4: Master Plan Implementation	Step 4: Build an M&E system	Finalising the M & E system in relation to

		modes of implementing the Master Plan
Stage 5: Master Plan Review	Step 5: Evaluate Master Plan policies, and programs and projects	Master Plan policies and programs and projects are evaluated per M & E system; Master Plan Strategy review based on the findings of the evaluation

5.2 STEPS TO STRATEGY REVIEW

5.2.1 Getting Started

M & E Planning

There may be several options in designating the group (or person) who will be in charge of further developing and implementing the M & E system alongside the Master Planning process. Some of these are discussed below:

- Make M & E part of the scope of activities of the Master Plan TWG and appoint qualified staff from the city government to handle the tasks
- Hire an M & E consultant (may be specialists from local universities) to work alongside the Master Plan TWG
- Make M & E system preparation part of the Master Plan consultant's required outputs, if Master Plan preparation is being commissioned to a consultant

The group (or person) who will be in-charge of preparing the M & E plan shall have the following broad tasks, which are largely parallel to those of the Master Plan TWG:

- Process planning
- Information gathering
- Stakeholder consultations
- Data processing and analysis
- Report writing and presentation to decision-makers

M & E Implementation

It is also at this stage that the institutional framework for M & E should be firmed up. There may also be several options to this:

- Make M & E a part of the functions of the local planning office. Regular project monitoring activities could be done by full time staff while periodic evaluation studies could be contracted to an external consultant. The latter could also provide benefits with regards to obtaining more neutral third-party viewpoints.

- Contract-out M & E activities through a project management or similar arrangements, say with a university-based group or private consulting firm. In this regard, the local planning office will have oversight functions over the M & E contractor.

Clear reporting mechanisms to the Mayor, Master Plan Steering Committee and the general public regarding the findings should be ensured, whatever the selected mode of implementation may be.

5.2.2 Select Indicators and Collect Baseline Information

The identification and collection of key indicators that will be used to measure Spatial Assessment stage of the Master Plan process. This interphase is important to ensure that key data to be gathered are measurable and will be relevant to M & E. Indicators that will be collected at this stage are considered baseline information, i.e., points of reference from which targets will be set. These will also be the basis of measuring and evaluating progress and accomplishments.

It should be noted that information collected at this stage should be considered as an initial set. Their completeness and appropriateness will be developed as the Master Plan strategy evolves. This initial set will particularly be reviewed at stages where goals and objectives as well as programs and projects are determined.

5.2.3 Determine Outcomes and Finalise Indicators

The Vision-to-Projects continuum is the major focus of M & E. It is thus important to ensure that stated goals, objectives, programs and projects has or could be provided with performance indicators and that these indicators can be verified.

The initial set of indicators that were identified during the local economy assessment stage will be checked for appropriateness and completeness in relation to the agreed-upon components of the Master Plan strategy. It is possible that new indicators will be identified such that baseline information for these will have to be collected.

Indicators should be characterised by the following:[23]

- Easy to collect
- Easy to understand
- Effective measures of performance
- Adequate to define the results of Master Plan activities of the local government
- Directly related to the outcomes of municipal local economic development actions
- Clear, precise and unambiguous
- Relevant: appropriate to subject at hand
- Economic: available at reasonable cost
- Adequate: they evaluate performance effectively and efficiently
- Monitorable

Examples of indicators and their relationship to objectives are presented below:

[23] LEDS Primer

Table 5.2 Examples of indicators

Objective: To modernise existing seaport facilities by 2015							
Indicator	**Measure & unit**	**Data Source**	**Baseline**	**Period 1**		**Period 2**	
		Frequency		**Expected**	**Actual**	**Expected**	**Actual**
Increased capacity to handle cargo	Volume of cargo handled	Project accomplish-ment report	500	600			
		Monthly					
Satisfaction rating of port terminal's services	Index of user satisfaction expressed as % increase	Port customer survey	30%	50%			
		Annually					

Source: Modified from LED Manual

5.2.4 Build an M & E System

The M & E system shows what will be monitored, type of activity, level of information to be obtained, how frequent will they be monitored and the purpose of each M & E activity. The following framework could serve as a guide in building the M & E system.

Table 5.3 M & E System Framework

Strategy Component	Type of Activity	Level of Information	When to Monitor	Purpose/ Users
Goals	Ex-post evaluation	Outcomes/ Impact Review of indicators and assumptions	Once, say two years after strategy implementation	Reports on outcomes used by management, donors, partners and policy makers.
Objectives	Mid-term review	Effectiveness Review of indicators and assumptions	Once, at the mid-term of strategy implementation	Reports on progress and needs for adjustments in the design of the strategies; used by management, project staff, donors and partners.
Programs	Monitoring and review	Output Defines levels of input and output	Annually	Supports preparation of annual work plan and budget; used by management,

				project staff and institutional stakeholders.
Projects	Monitoring	Input/ Outputs Reports on inputs, outputs, indicators and problems; ;	Monthly/ Quarterly	Supports monthly monitoring reports on inputs, outputs, indicators and problems; for progress evaluation and testing of assumptions; undertaken by project staff and used by management and project staff.

5.2.5 Monitor and Evaluate Master Plan policies, and programs and projects

There are several options in actually undertaking M & E activities as were described at the first step of this section. The selection of the final institutional arrangement for actual M & E should, however, consider the different nature of the two activities:

- Monitoring

This involves the "continuous assessment" of project implementation and focuses on planned versus actual schedules, budget utilisation and physical accomplishments. This is intended to provide project managers with regular information to enable them to quickly react if problems are observed. "Monitoring accepts the design as given; it measures progress, is focused on performance and occurs continuously." [24]

- Evaluation

Evaluation "does not accept the design of the project, rather it questions if the design is the best one." It involves a "stepping back" and is intended to examine the strategy's relevance, performance, efficiency and impact and considers the strategy in the broader context of the community.

5.2.6 Strategy Review

The strategy should be reviewed based on M & E findings and recommendations. Review may be done on an annual basis, before the preparation of the Annual

[24] LED Primer

Development Plan. The city government, Master Plan Steering Committee, local planning office and stakeholders should be involved in this review.

The following may be considered in reviewing the strategy:

- Validity of the institutional structure
- Validity of the SWOT analysis
- Validity of vision, goals, objectives, programs and projects in light of prevailing conditions
- Level of achievement of performance targets
- Validity of M & E system