

# THE HEALTHY CITY: PHYSICAL PLANNING TOWARDS SUSTAINABLE URBAN DEVELOPMENT

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## INTRODUCTION

Urbanization in Indonesia has been growing rapidly, and is expected to accelerate in the future. It is envisaged that the urban population of the country will grow from 54.7% in 1995 to about 73% in the year 2020. The fast rate of urbanization and continued concentration have resulted in various problems of traffic congestion, overcrowding, shortage of affordable housing, environmental degradation, flash floods, waste disposal, stress-related diseases and the increase in demand for more and better urban services.

This paper first introduces the concept of healthy cities and relates it to the aspect of physical development. After short overviews on the background of physical planning, the paper reviews the Indonesia physical planning system. The role of physical planning towards the achievement of sustainable development is then presented and this is followed by a discussion on the role of physical planning towards the achievement of sustainable urban development in Indonesia, illustrated with a few examples of planning tools being used.

## THE HEALTHY CITY CONCEPT AND ITS RELATION TO PHYSICAL DEVELOPMENT

### Healthy City Concept and Principles

The Healthy City concept is the 'Healthy for All' movement launched by the World Health Organization (WHO) in 1978. quoted definition of a healthy city is :

*"a healthy city is creating and improving those physical, economy and social environments expanding community resources which enable people to mutually interaction each other in the daily life"*

In more practical planning, a healthy city is characterized by the following:

1. A **clean and safe physical environment**;
2. A **stable ecosystem** that is sustainable
3. The meeting of **basic needs**;
4. A diverse, vital **and innovative urban economy**;
5. Connectedness with the past, with **cultural heritage**;

6. Access to a wide variety of **experiences** with extensive opportunity for contact, interaction, and communication;
7. A strong, mutually supportive community;
8. **Participation by the public** over decision affecting their lives, health and well-being;
9. Optimum level of **public health and care services** accessible to all;
10. A high health status
11. An **urban layout** that is compatible with preceding characteristics.

It has been stressed that although the above characteristics define a desirable city. A healthy city concept is a process of developing such a dynamic state, and is not an end in itself and it has always run until today.

### What Does Healthy City Means In Terms of Physical Development

Looking at the definition of a healthy city and its general characteristics as outlined earlier, one could immediately see that most of the aspects relating to the process of developing a healthy city are inter-twined with physical development and planning. This is not surprising given that physical development and improvements are part and parcel of the process towards social and health improvements. In this light, the goal of physical development planning in so far as a healthy city is concerned can be put as :

*The provision of optimal infrastructure facilities and protection of the environment and natural resourced towards a quality living environment.*

To give some examples, this goal could be achieved when physical planning is undertaken to ensure systematic development such as follows :

1. Planning for provision of basic infrastructures such as sewerage and drainage systems;
2. Planning for the provision of adequate open space;
3. Identification of sites for solid waste disposal and treatment;
4. Provision of adequate land for suitable housing, including squatters improvement;
5. Proper identification of industrial sites;
6. Planning for facilitating sufficient public transportation; and
7. Protection and improvement of natural habitats and cultural heritage.

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## THE INDONESIA PHYSICAL PLANNING SYSTEM

Successful development planning necessarily involves a combination of top-down and bottom-up approaches and inter-sectoral considerations. As Indonesia has a three-tier government and administration system, planning essential starts at the national level in the form of the Indonesia planning framework. Although these are basically socio-economic development plans, it is at this level that development policies, strategies and programs on a sectoral basis are formulated. This plan is complimented at the state level with the state development plans, which translate the national policies according to state priorities in terms of project and state-wide spatial distribution.

At the local level, physical planning is undertaken within the preview of the Town and Country Planning Act. Development planning here is more land use-orientated in nature and carried out on a district-wide basis, or at the urban center level, involving specific physical projects and proposals. At the same time, the spatial impact of policies and programs are continuously monitored to provide feedback for improving policy formulation at the national level as well as better implementation at the ground level. For this reason, this paper shall concentrate on this third level of physical planning.

### The Town And Country Planning System

Land use planning is undertaken within the provisions of the Town and Country Planning Act (UU RI No 26 Tahun 2007) to address certain pertinent environmental issues faced relating to sustainable development, e.g., preservation of natural topography and trees. It contains three basic elements towards an effective planning system, i.e., the planning administrative system, the development plan system, and the development control system. All these systems provide the Local Planning Authorities (LPA) with a wide range of tools to influence the final outcome of development towards a better urban environment.

## PLANNING FOR SUSTAINABLE DEVELOPMENT Concept of Sustainable Development

One of the earliest, and perhaps most widely accepted definitions of sustainable development, comes from the World Commission on the Environment and Development (WCED, 1987) (also known as the Brundtland Commission) which states that :

*"Sustainable development is -development that meets the needs of the present without comprising the ability of future generations to meet their own needs"*

Yet another definition is given by Agenda 21, which is the main document to have come out of the Rio Earth Summit, states that sustainable development:

*"... is something which improves the quality of life, improves the living and working environment of all people, provides shelter for all, creates sustainable energy, transport and construction activities and stimulates the related human resources development and capacity building required to achieve these goals"*

From these definitions, it can be summarized that the basic aim of sustainable development is therefore the promotion of development that enhances the natural and built environment in ways that are compatible with the following four themes:

1. Environmental quality - avoidance of damage to the capacity of natural ecosystems;
2. Conservation of the stock of natural assets resources;
3. Social equity and elimination of poverty;
4. Avoiding imposition of added costs or risks on succeeding generation.

### Sustainable Urban Development

Sustainable urban development is increasingly becoming an important area of urban planning studies and environmental policies. For example, the World Health Organization (WHO (1992) has indicated that:

*"Sustainable urban development should have as its goal that cities (or urban system) continue to support more productive, stable and innovative economies, yet do so with much lower levels of resource use."*

Agenda 21 has proclaimed 27 guiding principles; it contains 40 different chapters organized under four main Sections as a blueprint for sustainable development. Most of the chapters, especially those in Sections 1, 2 and 3, expound programs that are directly relevant for attaining sustainable urban development (refer Table 1).

It is clear that the concept of sustainable urban development is in line with the goals and concept of the healthy city. The major themes are as follows :

### Sustainable Urban Development and The Role of Physical Land Use Planning.

The critical role of land use planning for sustainable urban development has been reaffirmed many times, most significantly at the Rio Earth Summit in 1992. Among the 27 principles of the Rio Declaration, many can be linked to land use planning. Five notable principles can be translated into 'messages' for land use planning as shown in Table 2 :

These principles are elaborated and translated into policies and action programs, more particularly under the following chapter of Agenda 21 as presented in Table 3: At this stage, it can be concluded that sustainable development goals are already included in the planning goals identified within planning models, development plans and planning process. Land use planning has the instruments and potential to plan for sustainable urban development.

## **LAND USE PLANNING FOR SUSTAINABLE URBAN DEVELOPMENT**

The Town and Country Planning practice in Indonesia possesses several tools and mechanisms towards achieving the planning goals and objectives. As a general rule, all these tools have incorporated sustainable development into their underlying objective. Table 4 summarizes these tools and their areas of contribution towards the sustainable urban development and the process of creating the healthy city.

### **The Comprehensive Planning Future**

To achieve vision further, embedded within the underlying premise of attaining sustainable urban development, a comprehensive and universal planning has been formulated as a guiding principle in development planning processes called the Comprehensive Planning. This planning for the maintenance between Man and his Creator, Man and Man, a Man and Environment in order to attain a balanced a sustained development economically, socially, user-friendly spiritually and environmentally.

There are 14 principles in the Total Development Guidelines, with each having physical and spatial implications. The summarised in Table 5:

### **Development Plans**

Development plans have always been the traditional and principal planning instrument for achieving a healthy and quality urban living environment. And this has been adequately provided for under the Urban and Regional Planning.

Additionally, it has enhanced the element of environmental planning for sustainable development Local Plans. This includes specific requirements proposals :

1. Protection and improvement of physical environment;
2. Preservation of natural topography of an area;
3. Landscape improvement;
4. Preservation and planting of trees;
5. Creation of open spaces;
6. Preservation and enhancement of heritage buildings; and
7. Traffic management.

### **Development Control**

The objective of development control is to ensure that development should take place as envisioned by development plans in terms of overall layout, allocation land space, provision and distribution of infrastructure and community facilities as well as their contribution towards environmental improvement and protection.

When granting planning permission, to impose certain planning conditions for the purpose further regulating the nature, type and location development. The requirement for submission together with the application for planning

permission further enables to make development control decisions that safeguard the environment.

### **Strategic Environmental Assessment**

The Strategic Environmental Assessment (SEA) is a form of application of the Environmental Impact Assessment (EIA) concept at policy, plan or program level. It is a formal, systematic and comprehensive process for evaluating the impact of any policy, plan or program on the environment. The significance of SEA has been highlighted in one of the principles of the Rio Declaration. SEA is also identified as an important mechanism towards achieving sustainable development as recognised in AGENDA 21.

The impacts of development on the environment encompass a wide range of issues. They involve complex and dynamic interactions between many development variables, such aspects as biophysical, social and cultural. The SEA is undertaken to evaluate all possible alternative policies, plans or programs in order to ensure that those which will bring about the minimum of adverse impacts shall be accepted for implementation, along with suitable mitigation measures, where necessary.

In land use planning, the SEA is to be applied during the development plan preparation process, particularly at the local planning stage. This would be effective in minimising and mitigating adverse impacts on to the environment, especially in achieving the following :

1. SEA ensures environmental matters are given due consideration during development planning;
2. SEA facilitates the formulation of preventive measures against environmental degradation; and
3. SEA affords rational evaluation of alternative development policies and strategies.

Following the Integrated Resource Planning and Management System, SEA shall also be carried out at other levels of planning, ranging from the National Spatial Plan to Local Plan. Sustainable Development Indicators will be heavily in a SEA, firstly, to assess the impacts of various components of development are assessed to ascertain alternatives which possess the minimum of adverse impacts on the environment. Secondly, in the development proposals and control measures whereby components of i recommendations shall be geared towards achieving targets set the Sustainable Development Indicators.

### **Sustainable Urban development Indicators**

Conventional tools for urban management rarely provide the means for understanding the relationship between policy and urban development outcomes, let alone whether contribute towards Sustainable development. Agenda has indicated the need for developing indicators of sustainable development. The usefulness of indicators can be summed as follows :

1. Indicators quantify information, so its significance is more readily apparent;

2. Indicators simplify about complex phenomenon, leading improvement in communication; and
3. Indicators provide information in a form suitable highlighting change resulting from management actions

The Town and Country Planning Department is embarking on the Indonesia Urban Indicators Program which is part of the Global Urban Observatory (GUO) program. The program will produce Sustainable development indicators Indonesia cities. It is expected to indicate whether Indonesia urban areas have achieved sustainable urban development objectives. More importantly, it should provide accurate information of cities and towns for decision makers to formulate effective urban policies and programs.

The Indonesia Urban Development Indicators (interim) grouped under distinctive but closely related modules. Selected urban indicators in the initial stage are shown in Table 6, upon which further analysis and refinement shall be made.

### **Social Impact Assessment**

The Urban and Regional Planning Department is currently looking into means for putting human well-being as one of the focus for planning activities with the application of Social Impact assessment (SIA). The SIA is a formal, systematic and comprehensive process for evaluating the impact of any policy, plan or program on the socio-economic condition of a local community. Its underlying objective well-being of the community for whom a plan is being prepared or a project developed, which is in line with Comprehensive Planning and the concept of sustainable development.

The SIA is to be applied during the development preparation stage. Among the benefits of this concept are:

1. Maximisation of benefits from development to local community;
2. Contributes to effective development planning and environment management through identification mitigation measures against social problems; and
3. Encourage public participation in the planning process.

With the use of SIA, it is expected that physical planning bring better outcomes in terms of social good being, and contributing to better living quality. The interests of minor groups shall have more opportunities of being healthy. To give an example, the disabled can make more contribution towards planning for a "barrier-free" living environment.

### **Physical Planning Guidelines**

Effective implementation of development plan policies and development control system is closely supported physical planning guidelines. Planning guidelines important aid to planners and decision-makers to guide development towards sustainability. They

specify what poi means in practical terms. This could be the form of development and design guidelines, or standards and criteria for the provision of facilities. Some of the physical planning guidelines that are in use are as follows :

1. Planning Guidelines for Industrial Areas;
2. Planning Guidelines for Toxic And Solid Waste Disposal Sites;
3. Planning Guidelines for the Provision of Sites for Incinerator;
4. Planning Guidelines for Place of Worship
5. Current Guidelines and Geometric Standards On Road Network System;
6. Planning Guidelines for Siting of TNB Sub-Station;
7. Planning Guidelines for Retention Ponds as part of Open Space;
8. Planning Guidelines for Roof Top Gardens Development;
9. Planning Guidelines for Basic Amenities Associated with Rakan Muda;
10. Planning Guidelines for Development of Golf Courses;
11. Planning Guidelines for Coastal Development;
12. Physical Planning and Development Standards for Island Development.

### **Guidelines for Implementation of Planning Legislation**

In addition to the physical planning guidelines mentioned earlier, there are also guidelines formulated to especially facilitate the implementation of specific aspects. The guidelines provide details on ways and means for , fulfilling the requirements and to ensure the uniformity of implementation by Local Authority (LAs). Among the guidelines are those who directly contribute to environmental improvement and sustainable development, include :

Evaluation regarding the proposed development as well as details concerning the land site to be developed, such topography, geology, landscape, natural drainage and existing land use. Additionally, the guideline also specifies the type plans to be contained in the report, including plans, which illustrate steps for physical environment protection an improvement and protection of natural topography.

### **Guideline For Tree Preservation Order**

This guideline defines the category of trees which should preserve. This includes trees which are considered as:

1. Rare;
2. Endemic;
3. Endangered;
4. Unique;
5. Historical values;
6. Trees planted by significant persons; and
7. Trees within protected areas.

A Tree Preservation Order can serve by an LA for a particular tree(s) or cluster of trees in an area. Moreover,

the felling trees with a girth size of more than 0.8 meters are prohibited within the area of jurisdiction of a particular LA unless with prior permission.

### **Guidelines For Protection Of Natural Topography**

This guideline specifies measures to be taken for the protection of natural topography during the development process. It aims, such as erosion, siltation, sedimentation and pollution of natural waterways and landslides.

### **Guideline For Conservation of Historical Areas, Aesthetic and Architectural Values.**

This guideline is still being finalized. It aims to ensure that development plans, especially Local Plans, identify historically and heritage elements in an area and propose suitable conservation guidelines for protecting and maintaining such invaluable assets.

### **SUMMARY**

Urbanization in Indonesia has been growing rapidly; and is expected to accelerate in the future. Urban centers are seen as the engine of growth and opportunities. The potential for accelerated development -present within urban areas in Indonesia must be realised to the full if the urban sector is to make the maximum contribution to national growth. Mounting evidence from cities around the world shows that environmental deterioration is not a necessary or unavoidable result of urbanization and economic growth. The fundamental challenge is to learn how to plan better and manage effectively the process of urban development, avoiding or alleviating the detrimental side-effects while realising the positive potentials of city growth and change.

History has shown that mankind is a creative creature, able to adapt accordingly to his changing environment and invent innovative ideas to overcome the adverse of situations. The concept of physical land use planning had its origins in the effort to improve the urban physical living environment in reaction to degraded urban conditions, in the face of rapid urbanization and industrialization.

Given the complex and dynamic nature of problems, physical planning is not concerned with arriving at a specific end point. Rather, it is a continuous activity, involving the process of regular monitoring and readjustments in response changing circumstances of particular importance is the crucial process of cooperation and consultation with various interest groups.

The problems of the degraded urban condition are still with us today, albeit of a different intensity, nature and location. But this does not mean that physic land use

planning has failed to deliver. If anything, without planning, the situation is inevitably bound to be much worse. The continuing urban environment problem only goes reflect - and is a by-product of - mankind's unrelentless pursuit of wealth and development without due consideration to the issue of sustainability.

Meanwhile, physical land use planning will continue to evolve and shall have a positive role in contributing to urban physical environment improvement and protection. This paper has illustrated some of the important planning tools which a devised and used to ensure that physical land uses planning in Indonesia , and will continue to secure sustainable development of Indonesian cities.

This paper finds that the Healthy City concepts are in line with sustainable urban development. Planning for sustainable urban development is therefore consistent with the objective of a healthy city. Physical land use planning has to play in realising the Healthy City concept.

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Table 1 : Major Themes in The Agenda 21

SECTION	AREAS OF EMPHASIS
1. Social and Economic	Revitalizing growth with sustainability, creating and maintaining a sustainable living, the systematic and manageable growth of settlements, urban environmental quality, promotion of human health, prosperous societies living in a just and habitable world.
2. Conservation and Management of Resources	Efficient use and protection of local resources such as land, freshwater, forest, as well as global and regional resources like the atmosphere, oceans and seas.
3. Strengthening the Role of Major Groups	People participation and responsibility
4. Means of Implementation	Essential tools and mechanisms that constitute the foundation in the move towards sustainable development.

Table 2 : Key principles From The Rio Declaration

PRINCIPLES	'MESSAGES' FOR LAND USE PLANNING
Principle 3	Planning must address the meaning and practical consequences of sustainable development
Principle 4	Development plans must be 'environment-led'
Principle 10	Public participation in planning
Principle 11	Need for strong comprehensive planning laws which form part of a wider body of environmental law, and reflect understandings of natural processes
Principle 17	Environmental statements should be used as a principal means of minimizing damage and uncertainty

Table 3 : Chapters of the Agenda 21 Most Relevant to Planning

CHAPTERS	DESCRIPTION
Chapter 4	Land use planning should encompass the management c natural environment resources
Chapter 7	Sustainable human settlement development which integrates public participation in planning and decision making
Chapter 8 & 9	Integrated environment and development in decision making and an integrated resources planning and management
Chapter 27 & 31	Institutions, especially local authorities and NGOs, must play an efficient and effective role in environmental planning
Chapter 24 & 26	Increasing education, public awareness and public participation in environmental planning

Table 4 : Planning Tools and Mechanisms for Sustainable Development

PLANNING TOOLS	GENERAL AREAS OF CONTRIBUTION
Total Planning Doctrine	<ul style="list-style-type: none"> <li>• Sustainable development in general,</li> </ul>
Integrated Resource Planning and Management System	<ul style="list-style-type: none"> <li>• Conserve and optimal use of natural resources;</li> <li>• Environment-led policies and development plans; and</li> <li>• Environmental improvement and protection.</li> </ul>
Statutory Developments Plans	<ul style="list-style-type: none"> <li>• Areas for housing,</li> <li>• Areas for industries, facilities economic growth;</li> <li>• Optimal provision of basic infrastructure;</li> <li>• Identify natural areas for conservation;</li> <li>• Access to open space and amenities</li> <li>• Neighborhood planning and supporting communities</li> <li>• Sites for waste disposal</li> <li>• Manageable urban growth; and</li> <li>• Public participation</li> </ul>
Development Control	<ul style="list-style-type: none"> <li>• Optimal provision of basic facilities, amenities;</li> <li>• Quality physical living environment; and</li> <li>• Conservation of natural resources/assets.</li> </ul>
Sustainable development Indicators	<ul style="list-style-type: none"> <li>• Sustainable urban development</li> <li>• Management urban growth; and</li> <li>• Adequate amenities, infrastructure and socio-economic and health facilities.</li> </ul>
Strategic Environmental Assessment	<ul style="list-style-type: none"> <li>• Sustainable urban development; and</li> <li>• Environment-led urban/development plan.</li> </ul>
Social Impact Assessment	<ul style="list-style-type: none"> <li>• Public participation; and</li> <li>• Social equity.</li> </ul>
Physical Planning Guidelines	<ul style="list-style-type: none"> <li>• Optimal provision of basic facilities and Amenities;</li> <li>• Quality physical living environment; and</li> <li>• Conservation of natural resources/assets</li> </ul>
Guidelines for Implementation of Planning Legislation	<ul style="list-style-type: none"> <li>• Conservation of natural resources and cultural heritage;</li> <li>• Conservation of natural physical environment; and</li> <li>• Quality physical living environment.</li> </ul>

Table 5 : Principles of the Total Planning Guideline : A Summary

PRINCIPLES	PHYSICAL PLANNING IMPLICATIONS
1. Fairness and Equity	Respect for man and the environmental
2. Beneficence	Man should be responsible for his community and environment
3. Trust and authority	Decisions based on sound knowledge an consultation.
4. Unity	Promote a sense of togetherness in purpose.
5. Full Respect for Knowledge	Education becomes a central focus in planning.
6. Respecting Privacy and Division of space	Spaces to be delineated into functional areas private, semi-private and public space.
7. Encouraging congregation and identity	Neighborhood concept.
8. Peace and safety	Site evaluation to minimise risks to people.
9. Respecting the Right of Others	Planning should avoid harm and inconvenience 1 disadvantaged groups.
10. Co-operation, Respect	Integration of society between different levels of income group
11. Consultation	Consensus and public participation in planning.
12. Clean and beautiful	Environmental improvement and protection in planning.
13. Conservation of the Natural Environment	Protection of the environment from pollution
14. Zero Wastage	Reduce waste and efficient use of resources.

Table 6 : Basic Modules and Selected Urban Indicators

GENERAL SECTOR/MODULES	SELECTED INDICATORS
Land use	Land use distributions, e.g., <ul style="list-style-type: none"> <li>• Open space;</li> <li>• Built up area; and</li> <li>• Forest reserve.</li> </ul>
Population	Population by sex; and Population growth rate.
Households	The woman headed household; Household size; and Income distribution.
Economic	City Product per person.
Socio-economic	Household below the poverty line; Informal/undeclared employment; Hospital beds; Child Mortality; School classrooms; and Crime rate.
Infrastructure and Transport	Carrying Capacity e.g. <ul style="list-style-type: none"> <li>• Water supply;</li> <li>• Waste disposal; and</li> <li>• Road Network.</li> </ul>
Local Government	Capacity building
Housing	Affordable Housing

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