NOTE TO THE READERS

In mid-1996, the Sustainable Development Models and Systems Subprogramme of the Integrated Environmental Management for Sustainable Development (IEMSD), a joint programme of the National Economic and Development Authority (NEDA), the Department of Environment and Natural Resources (DENR) and the United Nations Development Programme (UNDP), initiated the conduct of a project on Capacity Building for Sustainable Land Use Planning. The activity was conceived in response to the demand from local government units (LGUs) for DENR assistance on land use planning in line with the devolution requirements of the Local Government Code. Undertaken through the technical assistance of the UP Planning and Development Research Foundation, Inc. (UP PLANADES), the project aimed to develop tools and instruments that would assist LGUs in the preparation of their land use plans and in the integration of sustainable development principles therein.

The initial outputs of the project included the: (1) Terms of Reference for Contracting the Preparation of Comprehensive Land Use Plans and Zoning Ordinances for LGUs; and (2) Directory of Land Use Planners in the Philippines. The activity culminated in the completion of a six-volume guidebook on sustainable land use planning. These guidebooks are:

Volume I: Guidebook on the Preparation of a Sustainable Land Use Plan
Volume II: Guidebook on Sustainable Coastal Land Use Planning and Management
Volume III: Guidebook on Sustainable Forest Land Use Planning and Management
Volume IV: Guidebook on Sustainable Agricultural Land Use Planning and Management
Volume V: Institutional Development Concepts on Sustainable Land Use Planning and Management
Volume VI: Laws and Regulations Relevant to Sustainable Land Use Planning
The guidebooks, which drew heavily from the existing manuals or guidelines prepared by HLURB, DENR and DA, contain technical and procedural guidelines for the preparation of an integrated land use plan and ecosystem-based planning for agriculture, forest and coastal zones/communities including their appropriate development regulations. They are intended to supplement the official land use planning guidelines prepared by HLURB, specifically Volume V: Guidelines for the Formulation/Revision of Comprehensive Land Use Plans - Land Use Sector, through the introduction of ecosystem-based land use planning and by integrating sustainable development concerns. The guidebooks are intended primarily for local government officials, particularly, the Provincial, City and Municipal Planning and Development Officials (PPDOs, CPDOs and MPDOs) and the Provincial, Municipal and City Environment and Natural Resources Officers (Provincial, Municipal and City ENROs) as well as DENR PENROs and CENROs. The guidebooks are also useful to land use planning contractors. They are envisioned to serve the following purposes:

- Serve as handy reference materials for LGU officials/contractors in preparing comprehensive (sustainable) land use plans and corresponding implementing tools;
- Provide technical guidelines to help direct and rationalize the development of environmentally sensitive and fragile zones and communities such as the coastal, forest and agricultural areas;
- Incorporate into the HLURB Guidelines for comprehensive land use planning process sustainable development principles and integrate therein relevant provisions of the Specialized Guidebooks for the coastal, agricultural and forest areas; and
- Provide a takeoff point for future expanded coverage of the comprehensive (sustainable) land use planning system to include other environmentally sensitive and fragile communities requiring more detailed treatment.

Prior to their finalization, the guidebooks were submitted to a series of roundtable discussions attended by experts and technical staff from the academe (UP Marine Science Institute (MSI) and UP School of Urban and Regional Planning (SURP)) and concerned institutions like the Housing and Land Use Regulatory Board (HLURB), Department of Interior and Local Government — Bureau of Local Government Supervision (DILG- BLGS), Environment and Natural Resources Office of the Provincial Government of Batangas, National Economic and Development Authority — Regional Development Coordination Staff (NEDA-RDCS), Department of Agriculture (DA) — Bureau of Soils and Water Management (BSWM) and Bureau of Fisheries and Aquatic Resources (BFAR), DENR — Natural Resources Management Program (NRMP), Fisheries Sector Program/Coastal Environment Program (FSP/CEP), Mines and Geo-Sciences Bureau (MGB), Protected Areas and Wildlife Bureau (PAWB), Forest Management Bureau (FMB) and National Mapping and Resource Information Authority (NAMRIA) for validation. The guidebooks were then revised in accordance with the inputs and comments given by the experts and agency representatives.

Interim copies of the guidebooks (except for Volume V) were then printed for pilot-testing purposes. The objective was to validate their practicability and user-friendliness. The pilot-testing was done in two ways, namely: through the use of the guidebooks in the preparation of an actual land use plan for Sampaloc, Quezon and through the conduct of a series of training on sustainable land use planning for LGUs, CENROs, PENROs and HLURB planners in Luzon, Visayas and Mindanao. For the pilot-testing in Sampaloc, IEMSD tapped the services of the Development Catalysts, Inc. The series of training, on the other hand, was conducted by UP PLANADES. A special run of the training was also conducted in collaboration with the Mt. Makiling Reserve Area and Laguna de Bay Commission attended by LGUs in the Laguna de Bay Region. The guidebooks were also submitted to HLURB for review and possible adoption by its Board. HLURB has expressed the possibility of making the IEMSD Guidebooks, specifically, those focusing on agriculture, forestry and coastal areas, as possible cross-references to their Volume V.

The results of the pilot-testing and the comments given by HLURB served as the bases for the refinement of the guidebooks. The said revisions are reflected in this version.

The Programme hopes that the Guidebooks, of which this volume is a part, would contribute to enhancing the capacities of LGUs to become better environmental managers.

Elmer S. Mercado

Undersecretary for Environment and
Programmes Development, and
Programme Coordinator, IEMSD
FOREWORD

Time and again, the attention of local planners is called to the need to incorporate environmental considerations at all levels of the planning process. Echoing the call for sustainable development, it thus became imperative that local plans reflect, in real and substantive manner, measures that would ensure that land use and development is consistent with environmental management for the benefit of present and future generations as well. Consequently, it became necessary for the local governments and the country’s environment department to work hand in hand to ensure that environmental aspects would not be overlooked in the course of land use planning.

It is in this light that the Department of Environment and Natural Resources (DENR), through the Integrated Environmental Management for Sustainable Development (IEMSD) Programme initiated the formulation of a six-volume guidebook on sustainable land use planning (SLUP). The guidebooks are not intended to duplicate but rather supplement the HLURB guidelines on comprehensive land use planning. They are primarily aimed at assisting local planners in the integration of sustainable development principles into the comprehensive land use planning process and providing detailed guidelines for the preparation of sustainable land use plans not just for urban areas but for agricultural, forest, coastal zones/communities including their appropriate development regulations.

It is hoped that through these guidebooks, the DENR would have taken another step at enhancing the capacities of local governments in environmental planning and management. After all, they are among DENR's partners in ensuring a better environment for our children and our children's children.

Let's make things happen!

Antonio H. Cerilles
Secretary

FOREWORD

Growing demand for land and its natural resources creates competition and conflicts. As population growth continues, the remaining wildlands are converted to agricultural use, while at the same time land is appropriated for urban expansion. Chapter 10 of Agenda 21, Managing Land Sustainably, recognizes that to meet human requirements in a sustainable manner, we must resolve these conflicts and find more effective and efficient ways of using land.

Conversion of wildlands to agriculture is still proceeding in many developing countries and is likely to continue. Chapter 10 of Agenda 21, Managing Land Sustainably, recognizes that to meet human requirements in a sustainable manner, we must resolve these conflicts and find more effective and efficient ways of using land.

It is estimated that by 2025, agricultural land area in the Asia-Pacific Region will expand by 25 percent and most of the conversion will take place in the few remaining forested areas. The Philippines' 27.5 million hectares of virgin forest in 1575 has been reduced to 800,000 hectares in 1994 (the last known comprehensive data). Forest destruction has been caused largely by indiscriminate timber cutting by both forest concessionaires and illegal loggers, as well as slash and burn agriculture, among others.

Urban population worldwide is currently growing at four times the rate of rural population. Over 60 million people are added to urban population each year - straining the capacity of local and national governments to provide event the most basic services to urban dwellers. More than half of the world's thirty largest urban conglomerations are located in the Asia-Pacific region. It is estimated that by the year 2000, there will be 28 megacities in the region with a population of over 200 million, an almost two-fold increase from 1995 figure of 125 million. This will obviously require further physical expansion over land areas. Associated with urbanization is rapid industrialization. Often, for historical reasons, cities were established on some of the country's most agriculturally productive land. Thus, a principal problem in cities and the surrounding areas is lack of planning, improper utilization and rapid conversion of agricultural lands to other uses. Other urban land use issues include those of transportation infrastructure and waste disposal systems for an increasing population, as well
as the need for "green" space to reduce the high stress of living in urban conglomerations.

Land is finite resource and it must be used in ways that provide the greatest sustainable benefits. Land use planning provides a basic tool to ensure that land is devoted to its most suitable use, thereby achieving efficiency. Efficiency measures also give proper weight to long-term needs in contrast to short-term profits. Proper distribution of land favors equity and proper conservation of land leads to sustainability.

This series of Guidebooks on Sustainable Land Use Planning and Management represents an important contribution towards helping ensure efficiency, equity and sustainability of our land resources and the vast wealth that these contain. UNDP is proud to have worked in partnership with the DENR, HLURB, NEDA and other concerned agencies, to prepare and disseminate these guidelines for our local government partners. UNDP will continue to promote the localization of the sustainable development agenda in partnership with all sectors of the society.

Sarah L. Timpson

Resident Representative
United Nations Development Programme, Manila

FOREWORD

We have come a long way since the monumental gathering of nations to establish the agenda for action on sustainable development during the 1992 Earth Summit. After we embarked with the creation of the Philippine Council for Sustainable Development (PCSD), we subsequently formulated the Philippine Agenda 21 (PA 21). Various policies and programs adhering to the principles of sustainable development have been promulgated and implemented. And now, the formulation of a 6-volume Guidebook on Sustainable Land Use Planning and Management has been completed.

PA 21 reflects a firm commitment of all sectors in our nation to operationalize the principles of sustainable development in pursuit of a better life for the present and future generations. These principles of sustainable development are now integrated in the Guidebooks on Sustainable Land Use Planning and Management giving both our national and local planners a guide in the preparation of a sustainable land use, coastal, forest and agriculture plans. In effect, the Guidebooks on Sustainable Land Use Planning and Management are tools that support and facilitate the fulfillment of the various targets under the agenda for action of the PA 21.

At the local level where land use planning is a prerogative of local governments, these Guidebooks would be very useful in advocating for the national allocation, utilization, development and management of their physical resources.

With the completion of these Guidebooks, we are further strengthening the advocacy on sustainable development not only in theory but much more in application, specifically, on the development of the various plans. And hopefully, with the implementation of said plans, we would eventually come to realize a better life for our present generation as well as the generations to come.

Isagani B. Valdellon

Deputy Director-General
National Economic and Development Authority

FOREWORD

The Philippine Strategy for Sustainable Development (PSSD) or the Philippine Agenda 21 aims to prevent
unsustainable extraction or overexploitation of our natural resources beyond their carrying capacities. It means living on the interest from natural capital rather than on natural capital itself. Sustainable development must therefore include the integration of environmental considerations in planning and decision-making.

In this regard, guidelines were promulgated to Local Government Units (LGUs) in the formulation or revision of their Comprehensive Land Use Plans (CLUPs) and Zoning Ordinances (ZO) which is the primary dominant bases for future use of their land resources. Pursuant to our mandate, the **Housing and Land Use Regulatory Board (HLURB)** approved a ten-volume **Guidelines for the Formulation/Revision of Comprehensive Land Use Plans** for local government units.

The DENR under its IEMSD Programme embarked on the formulation of Guidebooks for Sustainable Land Use Planning and Management. We know that this DENR publication is of value to the target end users and the local government units and may serve as additional reference in their mandate of preparing Comprehensive Land Use Plans.

**Romulo Q. Fabul**

Commissioner and Chief Executive Officer
Housing and Land Use Regulatory Board (HLURB)

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PART ONE

INTRODUCTION

1.1 The Philippine Situationer

The forest is an important natural resource that provides a wide range of benefits at local, national and global levels. It has been, and continues to be, subjected to numerous yet conflicting uses that include forest
production (for wood and other forest products like resin, pulp and paper), food production, human settlements, watersheds, tourism/recreation, mineral production, energy production, biodiversity conservation, industrial site, and other economic activities or any combination of the above.

It is a fragile, yet over-exploited ecosystem. For instance, deforestation and forest degradation have reduced our forest cover to less than 6 million hectares in 1995 from about 15 million hectares 50 years ago\(^1\). Until recently, deforestation in the Philippines was acknowledged to be among the highest in the world. As a consequence, there has been accelerated soil erosion, siltation of water reservoirs, rivers and waterways, more frequent flash floods, shortages of wood and other forest products, and extinction of unquantifiable number of plant and animal species. And with fewer trees to soak up carbon dioxide from the atmosphere, the risk of global warming is increased. The country's forestry program has largely been ineffective due to the following:

- A forestry policy that has outlived its relevance and usefulness by remaining highly regulatory rather than development-oriented.
- The poverty of the majority of the population that has driven landless lowland farmers to the uplands, overloading the enforcement capacity of the forest administration.
- Low priority placed on forest protection, both during the logging and the post-logging boom era. When logging was at its height, the forest was believed to be inexhaustible. Reforestation appeared to have priority over protection in the belief that deforestation must be balanced with reforestation\(^2\).

Fortunately, forests have the capacity to regenerate. When properly managed and utilized, forests provide a multitude of products services and other benefits that are essential to the physical, economic, social, political, environmental and religious upliftment of the present and future generations of Filipinos.

1.2 Rationale of Forest Land Use Planning

The goal then is to manage, develop and utilize forest lands and the resources therein on a sustainable basis to meet the needs of society. A basic ingredient of forest land use planning is the allocation of forest lands into their appropriate uses consistent with existing biophysical conditions (e.g., topography, soil type, land use, climate, water sources, etc.) and socioeconomic, cultural and political realities. Land use planning for forest land should be able to delineate two functional major land uses which are production and protection forests.

A long-term comprehensive forest land use plan provides the framework that would guide development efforts toward the attainment of the proper use of forest resources. This becomes imperative considering the multitude of alternative and competing uses, the adverse consequences of improper land use affecting large areas over long periods, and the, difficulty and high cost of rehabilitating denuded and degraded forest lands. Moreover, the fast turn-over of DENR personnel and the short term of office- (3 years), of local government officials make it necessary to have a long term land use planning framework for consistency and sustainability of efforts in the forest areas.

A good forest land use plan is expected to:

- provide continuity and rationality to otherwise disjointed, sometimes overlapping and even conflicting projects in the uplands;
- avoid improper land uses and their disastrous impacts;
- provide the framework for identifying sustainable management strategies and investment priorities;
- promote the sustainable production of desired goods and services; and
- promote community participation in the planning and management of forest resources.

1.3 Purpose of the Guidebook

In recent years, DENR has initiated closer collaboration with the Local Government Unit (LGUs) in managing forest areas by making them partners in the planning and management of forest resources within their jurisdiction. Part of this strategy is the mobilization of local communities as resource managers, making them
accountable for the protection, development and rehabilitation of forest areas while reaping the economic benefits from selected development and the utilization of forest resources. For only in placing the responsibility of protecting the environment in the hands of the local people can there be real and sustainable management of natural resources. The national government (i.e., DENR), on the other hand, must strengthen its standard-setting and regulatory powers, while coming out with policies that are development-oriented.

Thus, a locally-responsive forest land use plan that reconciles the concerns of the DENR, the LGUs and the local communities is necessary in bringing about better partnership and sustainable management of the country’s forest lands and other resources.

This Guidebook has been prepared to assist DENR as well as local planners and technical personnel, particularly at the provincial and municipal levels, in the formulation of comprehensive land use plans that incorporate concern for forest lands and unclassified lands of the public domain. It is intended to provide standard procedures and criteria for forest land use and allocation. Specifically, it provides for:

- A participatory, cross-sectoral allocation of forest lands to their appropriate uses.
- The mechanism for the integration of the Forest Land Use Plan with the Provincial and Municipal Comprehensive Land Use Plans.
- The elevation of forest land allocation decisions from the barangay and municipal levels to the provincial level, using the appropriate biophysical integrator of watersheds.
- Support of the forest allocation and land use planning decisions with the available data, maps, and information under specific resource and ecological conditions.

To initiate this process, a simple and practical procedure needs to be established as a guide in formulating the forest land use plan at the local level. While sophistication in the level of mapping and analysis can be raised through the use of computers, particularly computer-assisted Geographic Information System (GIS) already available in some regions and provinces, the guidelines presented herein reflect simple manual methods of mapping and analysis which are within the general capabilities of DENR field officers and LGU planners. Where GIS facilities are available in some LGUs, these can be used to facilitate the conduct of more in-depth analysis which is essentially the procedure suggested in this Guidebook.

Notes

1. Recent LANDSAT images place adequately stocked forest lands at 3.8 million hectares and open forest lands at 5.3 million hectares only. By the turn of this century if forest destruction continues unabated, the natural forest will yield very little timber and there will be a need to establish and maintain tree plantations. (Sajise et. al., 1994)