Thesis Title	Gis Application for the Development of Potential Landuse Analysis for Residential area in Bungkum District, Bangkok
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ABSTRACT

Rapid development in Thailand in the past two decades has led the country to an enormous economic success. With high GNP growth rate , Thailand has became one of the fastest growing economy in the world. Bangkok, the capital city and the center of all development in every aspect, has grown from a small size capital city to the world's new Megacity. Bangkok's population is expected to increase gradually, but of a slower pace. The city's decreasing average household size results in more housing demand. At the same time, rapid population growth causes various types of land use expansion in the city. The inner area of the city has high land use density, most of the settlement expansion is then occurring in the outer area.

The objectives of the study is to analyze the direction of settlement expansion and supply of housing and to identify suitable area for residential land use with the application of 3 Systems :

- Geographic Information System (GIS)
- Global Positioning System (GPS)
- Remote Sensing (RS)

STUDY METHODOLOGY AND PROCESSES OF THE STUDY

Data Sources: 4 types of data sources are selected :

1. Maps from The Royal Thai Survey Department (RTSD) and other related agencies.
2. Aerial Photos data
3. GPS survey data
4. Satellite data (Landsat TM)

Processes and Methodology

Section 2 Review concept and theory and identify factors.

Section 3 Identify research criteria, apply GIS , GPS and RS process to the study.

Section 4 Analyze the outcome of the study.

Data Analysis

The 'Union' overlay analysis is used in this study. This method allows information merging of two (or more) base map layers. The outcome of this analysis includes the development of spatial data in every single polygon of the study area. The built-up area is then intersect to show only the remaining available area. We could then consider Land Subdivision Regulation and finally identify suitable areas for residential development in regards to community size.

Output

The output of the analysis is displayed with Arcview program and Arcplot modules. The result of the study shows that most of the landuse expansion occured along Sukhaphiban 1 Road and Ram Indra KM 8 junction area. The residential land use expansion occured along both sides of Ram Indra Road, especially on the KM8 junction. The non-developed inner areas which possess sufficient existing infrastructure, public facilities and future access to the new Ring Road system, have a high potential for land development. In addition, these areas have been authorized as low-density and medium-density residential zone making them suitable for future residential development. The study of the built-up area from aerial photos interpretation shows that existing land use is concentrated along the sides of major roads and some other secondary roads. The spatial analysis outcome also indicates that high development potential areas are located along both sides of the major roads and secondary roads respectively. The findings suggest that the ribbon development trend in Bangkok will continue to expand in the near future.

Development Guidance Policies

- The policy to develop access in the inner areas along the major roads, especially along the blocks in-between Ram Indra-SukhaPhiban 1-Sukha Phiban 2 Roads which are large vacant areas. With a well-designed land use control plan, these areas can be developed effectively.
- The policy to provide sufficient infrastructure and public facilities to the designated residential areas based on a comprehensive plan to encourage settlement expansion in these areas.

The GIS application can be used effectively in urban planning analysis since the planning processes have to deal with spatial and attribute data analysis where topology data is quite comprehensive and can be used in planning and implementation. Different kinds of data used in the planning processes can be physical, economical, social, Landuse, environmental, etc. GIS application is a useful tool in data integration and analysis, information maintenance, as well as plan revision. Standardization is a necessity to all uses of technologies. To use GIS , GPS or Remote Sensing data together, a set of standards may be needed to allow a systematic exchange (data or technology transfer) of information.