Development and application of "A Pictorial Encyclopedia of Japanese Residential Zones" for sustainable urban planning

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〔SYNOPSIS〕

Several studies have indicated that building a compact urban layout is an important countermeasure for reducing gasoline consumption and achieving a more sustainable society. Actually, numerous municipalities have announced plans for promoting a compact urban layout. Moreover, the demographic structure of Japanese urban areas is changing drastically. Urban activities are retreating from suburbs in all major cities, engendering serious confusion of urban layout planning. It is necessary to present reliable perspectives for this changing urban consolidation.

Precedent studies have shown the effects of compact cities mainly on a municipality scale, not corresponding with an actual planning scale, such as residential zones. This information cannot help municipalities to develop feasible plans for promoting a compact urban layout. For realization of a compact city and sustainable society, a database should be developed that facilitates examination of a compact urban layout on an actual policy scale. Furthermore, it is necessary that anyone who is ignorant of technical knowledge of city planning, including residents, be able to understand these databases and consider town planning with an illustrative projected image.

An objective of this study is to organize the database calculated on a neighborhood scale of around 20 ha on average, which corresponds with an actual policy scale, not on a municipal scale. In other words, this study is intended to develop "A Pictorial Encyclopedia of Japanese Residential Zones", which includes pictures taken in actual residential zones corresponding to its type.

A great advantage of this study is that the database can cover all types of neighborhood zones that exist in Japanese cities and provide a package of various indicators, including land use, gasoline consumption, degree of automobile dependence, and residents' attributes.