A Concept of Land Administration Tool against City Sprawl

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SUMMARY

In 2015, Japan experienced a decline in total population for the first time since National census started in 1920. With the persistent demographic change, many municipalities are facing serious problems such as devastation of central area. Although the population decreases, in many cities sprawling into the suburbs has been still in the process. This phenomenon is not only a city problem but it is closely connected to efficiency of suburban agriculture. That is because in Japan, marginal area between city and rural village is the area of highest agricultural productivity.

To control undesirable sprawl of city, usual tool for municipal government are zoning and development plan. To make proper plan and efficient explanation, it is necessary to assess merit and cost of each development plan and present them clearly on maps and statistics. The basic information for such assessment and presentation contains present zoning, land use, existing social infrastructure and population distribution together with temporal variation of those. As acquisition of land is a very important procedure in development, the information should be related to land parcel. Due to historical reason, land ownership in paddy field and farm are small in scale and land acquisition is always a big issue.

Simulation of future economical environmental and social impact of alternative development plans will support right evaluation of those plans. The evaluation should be done not only from city side view point but also from agricultural view point. For such evaluation based on communication over objective estimates, GIS based on LADM will be the best tool. This problem is many departments' concern. This tool should collect data from many DBs in the municipality. Security measures will be applied and data will be transferred. Frequently used process will be prepared as a module and users can select modules and compose suitable system easily. A conceptual design of such tool will be proposed.