A Study on Spatial Pattern of Urban-rural Mixture in the Suburbs of Japan

- From the points of view of farm management and urban infrastructure projects -大都市郊外における農住混在の空間形態に関する研究

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Introduction A Variety of Urban-rual Mixture

多様な農住混在

How and what kind of mixture should we design in the future? 今後どのような混在空間をどのように形成していくべきか



We should grasp the process of forming the different mixed patterns. 様々な農住混在の実態とその形成プロセスを把握することが必要

Spatial Characteristics of The Mixed Areas

農住混在地区の空間特性

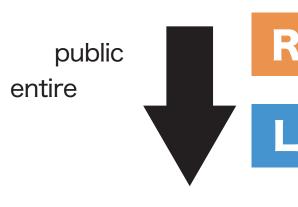
We examine the spatial characteristics of areas where more than 30% of farmlands are expected to remain using a questionnaire survey.

アンケート調査を元に、地区内の生産緑地面積に占める特定生産緑地指定意向面積の割合が30%以上の地区を抽出し、以下の視点で 空間特性を分析した。

Target area 対象地: Hino city 日野市 Execution period 実施時期: February 2019 Number of Targets 配布農家数: 464 Numbers responded 回答数: 134 Response rate 回収率: 29%

Process 地区の形成過程

We classify the neighborhoods based on whther those formed by public plans or those formed by private developers and farmers.

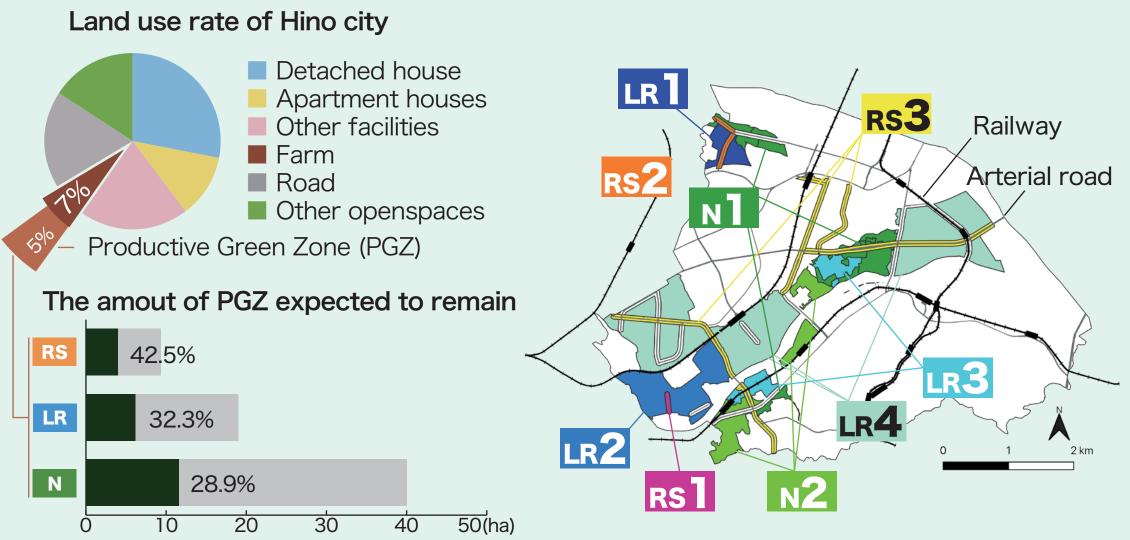


Road Side area 都市計画道路沿道地区 along arterial roads authorized in urban planning

Land Readjustment area 区画整理完了 / 事業地区



Normal area 一般地区



Based on the questionnaire, farmlands will remain if located: - along arterial roads

- in land readjustment areas
- in areas where few farmlands are remained or scattered

Spatial form index of the mixture 空間形態の指標 農地率 Abandance of Farmland (F) 集積度 Degree of Dispersion $D = \frac{A-S}{F-S}$ Distribution 形状 不整形度 Irregular degree $I = \frac{L_h + L_r}{r}$ Shape 宅地隣接度 Adjacency to Housing land $N_h = \frac{L_h}{\Gamma}$



Process of Forming The Mixed Patterns

農住混在空間の形成プロセス

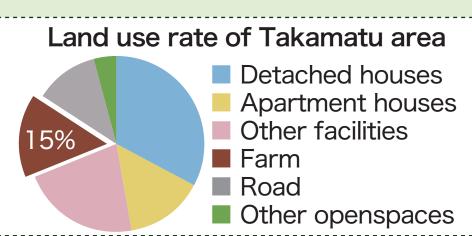
We use farmers' registration certificates to investigate the relationship between farmers' land management and spatial change. 登記簿調査を元に農家の土地運用により混在空間が形成されるプロセスを敷地スケールで分析した。

Target area

1986

2016

Takamatsu, Nerima 練馬区 高松地区 (農の風景育成地区)



The borders between farmland and other landuse 農地と他土地利用との境界

East Detached houses 2016 Farmers' houses Apartment houses 1986 West 2016 Other facilities Road 1986 Parking lots 2016 Farm (owned by South 1986 other farmers) 2016 1500 1000 1000(m) Rate of borders' length (1986) Rate of borders' length (2016) East 東 East 東 West 西 West 西 North 北 North 北 South 南 South 南

Direction and length of the borders

Farmers tend to develop farmland that - is not adjacent to farmers' home

borders roads on its east or west side - is irregular or small.

When a block of farmland is owned by more than one farmers, that block tend to be scattered.

The rate of borders fronting houses has increased, espacially in the north direction.

Farmland have been diverted into long and narrow in the north-south direction.

Keyword for Designing Urban-rural Mixture



■ Farm ■ Detached houses

Farmers' houses sold for developers

Location of the mixture ス 混在の方位

Patterns of diversion by farmers

農家による農地転用パターン

Houses tend to develop on the east, west and northern sides of farms. We should take this location into consideration.

Apartment houses

Other facilities Road Other openspaces

■ Visible patchwork -landscape-顕在パッチワーク

As a result of inheritance and other factors, scattered farmlands cover the urban-rural landscape. We should consider managing this patchwork of farmland.

Invisible patchwork -ownership-潜在パッチワーク

農住混在の空間デザインに向けて

Some large blocks of farmland are owned separately by more than one farmers. Farmers should cooperate in order to keep the advantages of large lots.