

**United Nations Expert Group on the Integration of
Statistical and Geospatial Information**
First Meeting
New York, 30 October - 1 November 2013

Agenda: Item 8

Geographic Boundaries of Population Census of Japan ¹

Prepared by Japan

¹ This document is being produced without formal editing

Revised 31 Oct. 2013

Geographic Boundaries of Population Census of Japan

MAKITA Naoki

National Statistics Center, Japan

First Meeting of the Expert Group on the Integration
of Statistical and Geospatial Information

S-1522FC /S-1523FC (Secretariat Building)
UNHQ New York, 30 Oct. – 1 Nov. 2013



National Statistics Center, a working arm of Statistics Bureau (SBJ),
is an independent administrative agency.
NSTAC employees have status of governmental official.

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1. Hierarchy of geographic boundaries

	Note	Type	# as of 2010 Population Census
Prefecture	<ul style="list-style-type: none"> • First tier of local government 	Administrative boundary	47
Municipality	<ul style="list-style-type: none"> • Second tier of local government 		1728
City/Rural Block	<ul style="list-style-type: none"> • Boundary intending to simulate subdivision of municipalities. • A principal unit for disseminating small area statistics 	Statistical boundary	Around 22 thou.
Enumeration District	<ul style="list-style-type: none"> • Boundaries based on the number of household (around 50 for each ED) to assign enumerators to deliver and collect questionnaires. • The sampling frame for statistical surveys. 		Around 101 thou.
Basic Unit Block	<ul style="list-style-type: none"> • Elemental (smallest) boundaries expected to be stable over time • The smallest unit for disseminating small area statistics 		Around 189 thou.

1. Hierarchy of geographic boundaries

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1.2. Basic Unit Block	<ul style="list-style-type: none"> • Elemental (smallest) boundaries expected to be stable over time • The smallest unit for disseminating small area statistics 		Around 189 thou.

1. Hierarchy of geographic boundaries

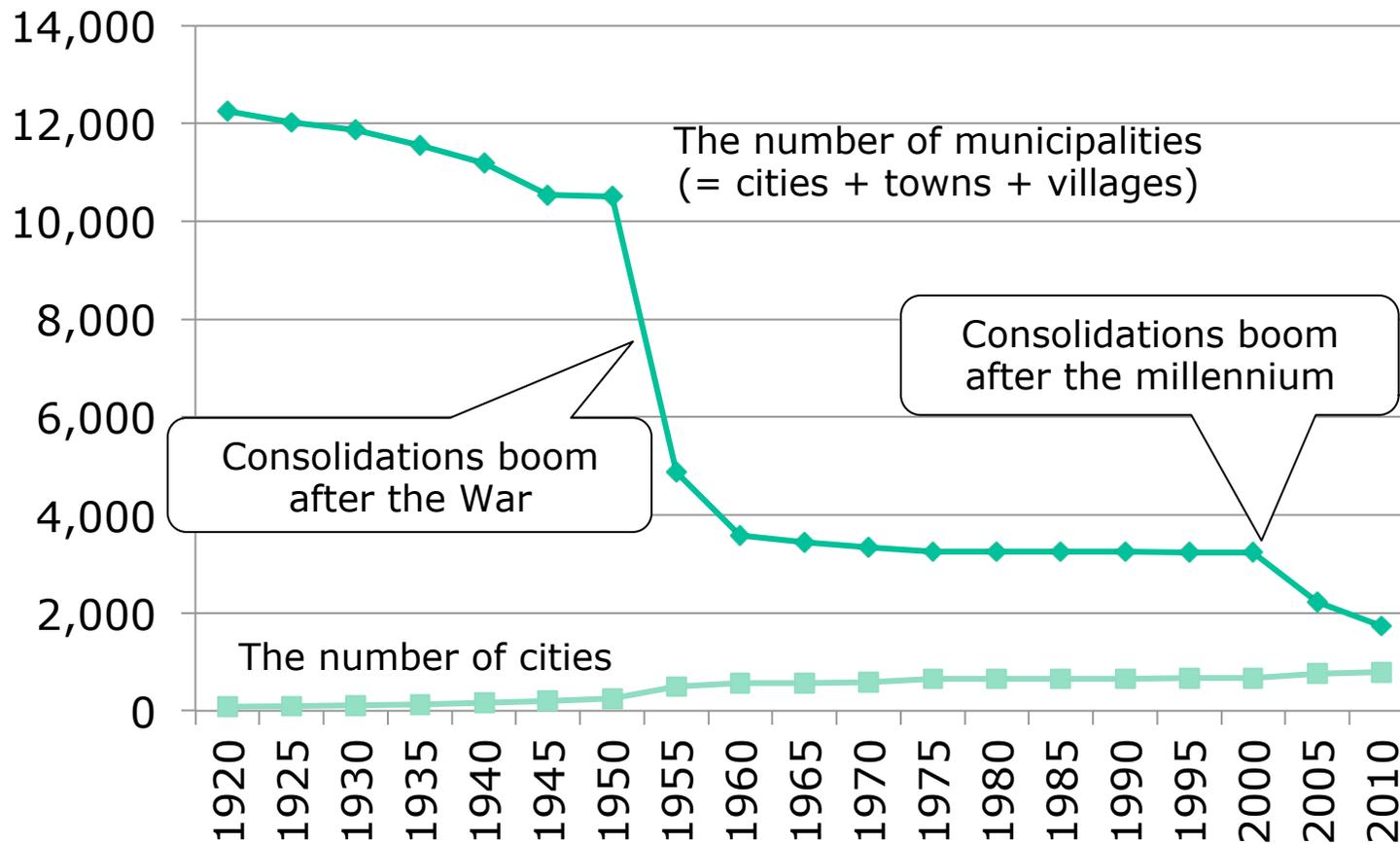
1.1. Municipality (# = 1728)

- There are three kinds of municipality according to the level of development: city (Shi), town(Machi) and village(Mura).
- Originally, a city had been recognized as an urban municipality.
- However, because of repeated policies of promoting municipality consolidation, nowadays, even a large rural municipality may be permitted to become a city.
- So, it is no longer possible to distinguish the level of development of municipalities by city, town or village.
(see Densely Inhabited District)

1. Hierarchy of geographic boundaries

1.1. Municipality (cont.)

The number of municipalities



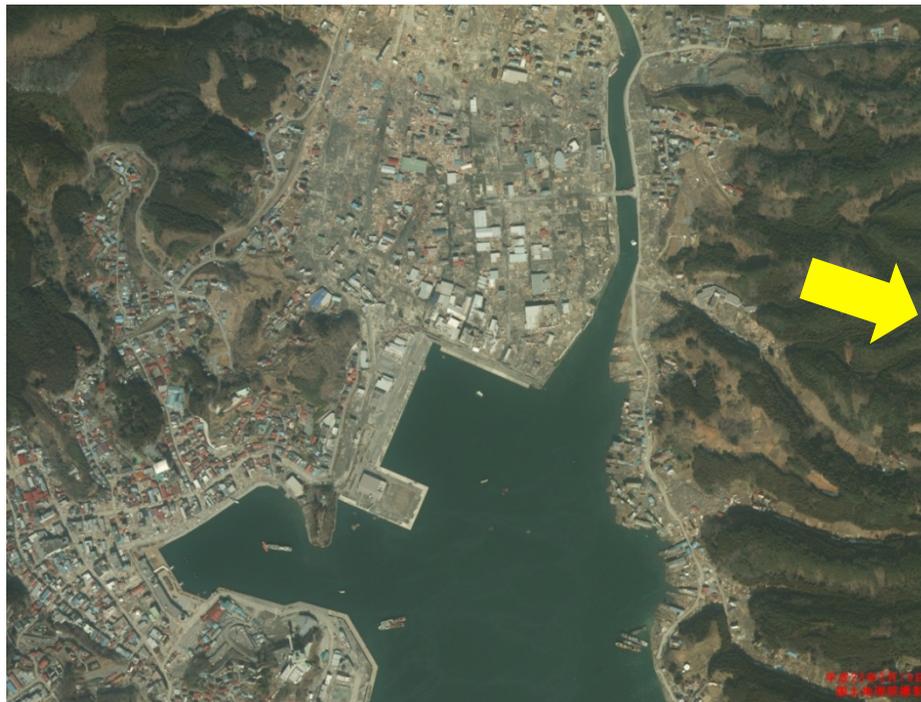
1. Hierarchy of geographic boundaries

1.2. Basic Unit Block (# ≈ 189 thou.)

- BUBs are statistical blocks delineated by clear and stable geographic characteristics and landmarks such as roads, railways, rivers, etc. to establish smallest permanent geographic units.
- One BUB comprises around 20-30 households generally (but not necessarily).
- BUB is the elemental unit for processing and compiling small area statistics of Population Census. Since BUBs are too small for cross-classified tabulation, statistical tables by BUB to be released are limited to be simple.
(see City/Rural Block)

Areas submerged by Tsunami after the Great East Japan Earthquake, 11 March 2011

A aerial photo taken by Geospatial Information Authority of Japan (the Japanese NMO) after the Tsunami (released on 18 April 2011)

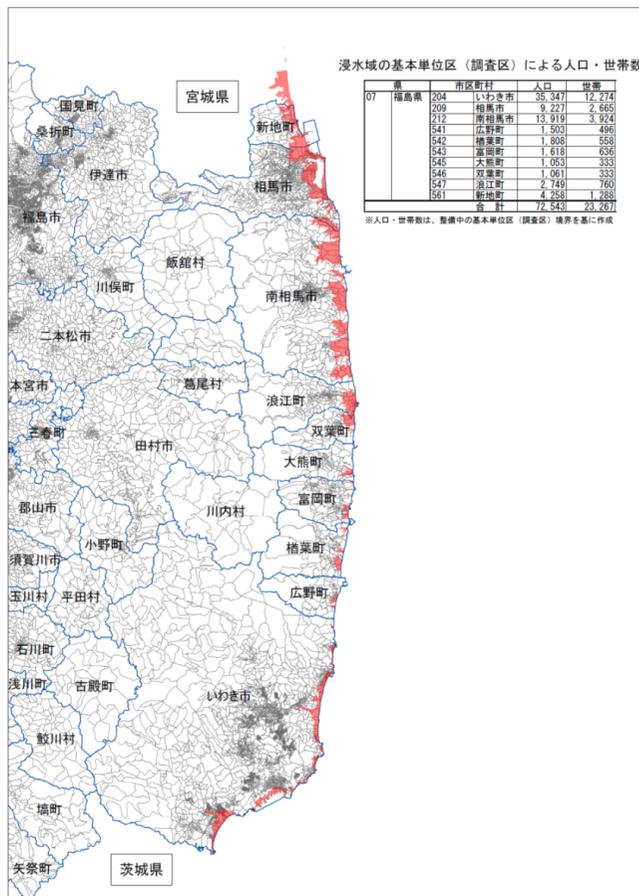


Submerged areas of Kesenuma City, Miyagi Prefecture



Areas submerged by Tsunami after the Great East Japan Earthquake 11 March 2011

Fukushima Prefecture



Population and households in the submerged areas of three affected Prefecture

Prefecture	Population	No. of households
Total	510,697	179,278
Iwate	107,503	39,673
Miyagi	331,902	116,758
Fukushima	71,292	22,847

The population and household figures by adding up submerged BUBs based on the preliminary tabulation of 2010 Population Census are released on 21 April 2011.

<http://www.stat.go.jp/info/shinsai/index.htm>
(in Japanese language)

1. Hierarchy of geographic boundaries

1.3. Enumeration District (# ≈ 101 thou.)

- The entire area of Japan is divided exclusively and exhaustively into EDs, before Population Census is taken place every five years.
- ▣ The EDs for the 2010 census were demarcated on October 1, 2009, a year before the Census Day. The EDs were subsequently partially amended up to the Census Day (and BUBs as necessary) to incorporate changes after demarcation. Thus, the EDs were finally demarcated as of the census date.

1. Hierarchy of geographic boundaries

1.3. Enumeration District (Cont.)

- Each ED is normally a combination of two or more BUBs so that an ED contains around 50 households to assign an enumerator for questionnaire delivery and collection.

In cases a BUB contains too many households such as high rise apartment house, it is counted as one ED or is divided into two or more Eds.

- EDs are also used as a sampling frame for household surveys of official statistics as well as for some of public and academic statistical surveys.

1. Hierarchy of geographic boundaries

1.4. City/Rural Block (# ≈ 22 thou.)

- An C/R Block is constructed by combining EDs (and BUBs) so that the block simulates a subdivision of municipalities.
- C/R Block is the principal unit for disseminating small area statistics of Population Census. Since C/R Blocks are large enough, statistical tables by C/R Block can offer complex cross-classified data. (see Basic Unit Block)
- Since C/R Blocks are created with permanently stable BUBs to simulate subdivision of municipalities , topological interoperability between them is not necessarily ensured.

1. Hierarchy of geographic boundaries

- These geographic boundaries are managed by a 'Census Mapping System.'
(see the brochure)
- 5 + 9 digits Code system
 - Prefecture: 2 digits
 - Municipality: 3 digits
 - City/Rural Block: 3+1 digits
 - Enumeration District: 2 digits
 - Basic Unit Block: 2+1 digits

'+1' s are reserved for a possible future partition of C/R Blocks and BUBs

2. Special geographic boundaries

- Composite geographic boundaries

 - 2.1. Densely Inhabited District

 - 2.2. Metropolitan Area

- Gridded geographic boundaries

 - 2.3. Grid Square

2. Special geographic boundaries

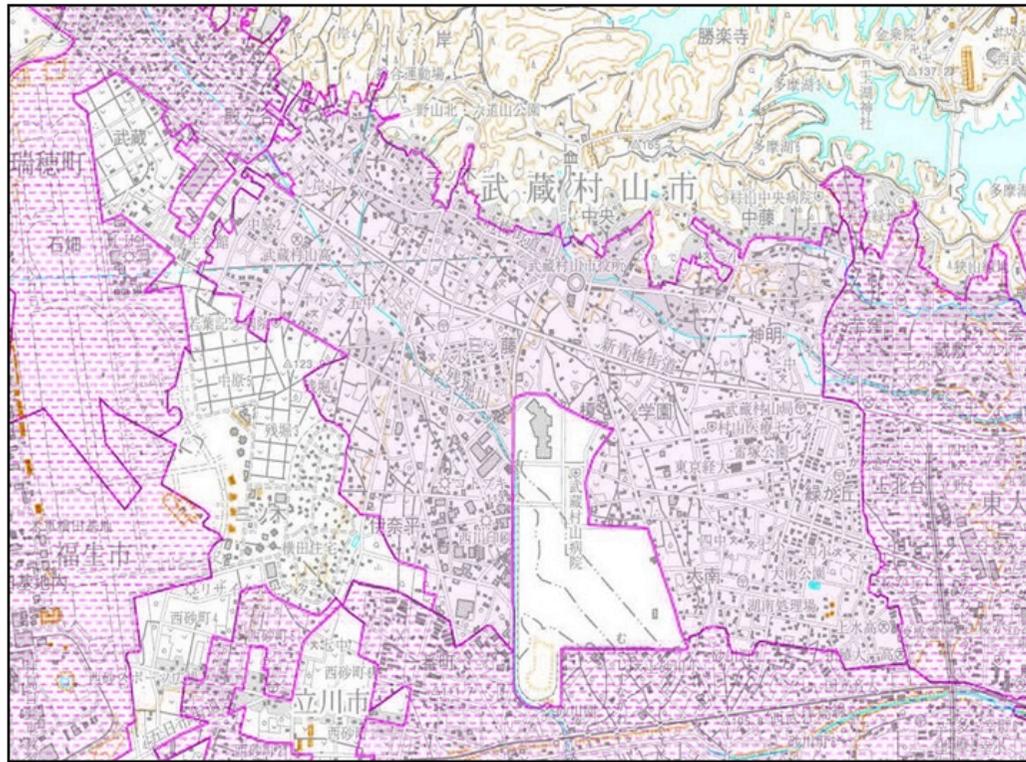
2.1. Densely Inhabited District

- A DID consists of adjoining basic unit blocks that have high population density of 4,000 persons/km² and overall population adds up to 5,000 residents or more.
- DID has been established since 1960. Population Census 2010 identified 1319 DIDs.
- DID is used as one of criteria for the amount of annual grants from the central government to prefectures/municipalities. DID is also used as a basis for urban planning and its redevelopment, disaster management measures, etc.

2. Special geographic boundaries

2.1. Densely Inhabited District (cont.)

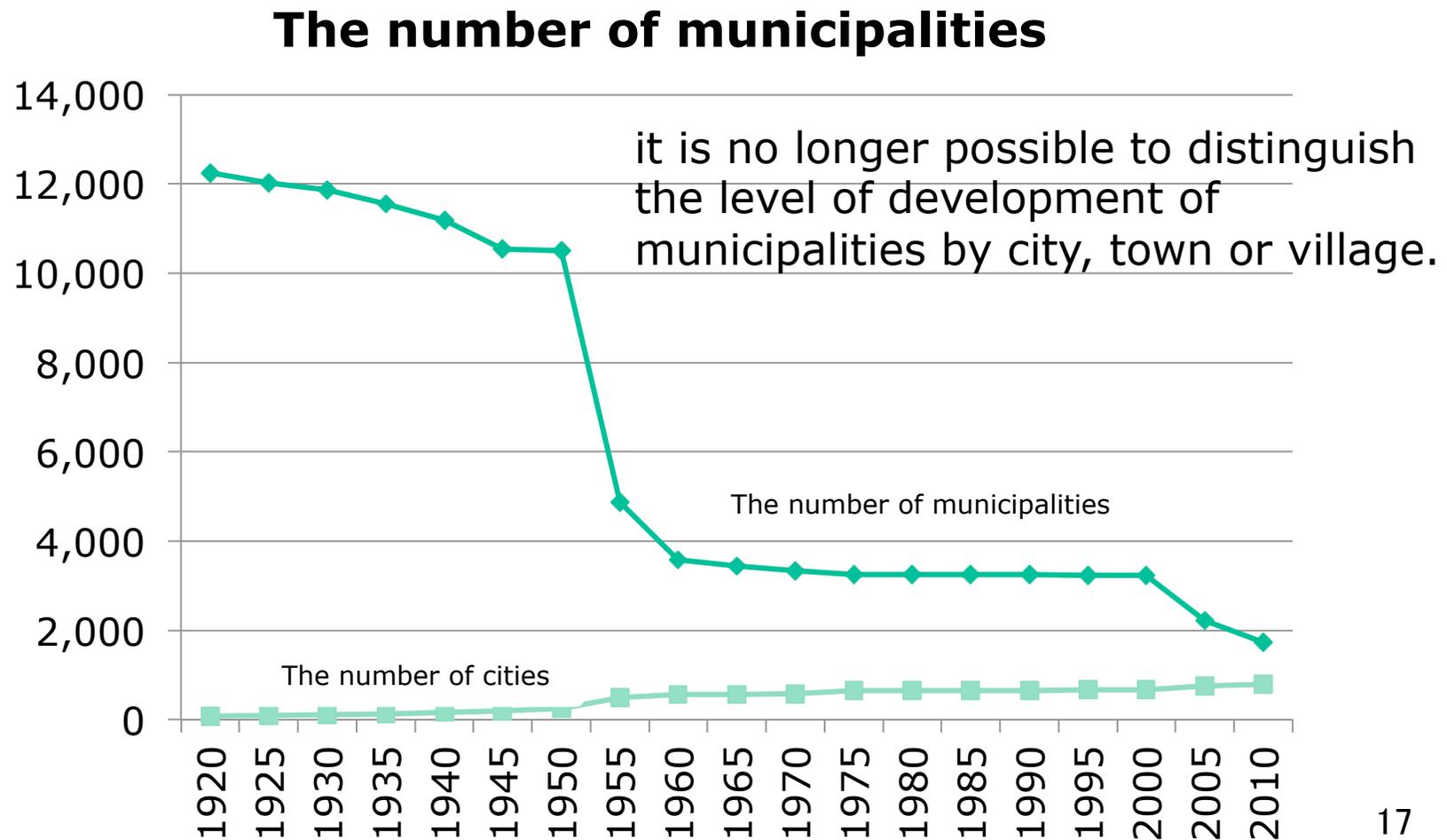
- DID of Musashi Murayama city, Tokyo



<http://www.stat.go.jp/data/chiri/gis/index.htm>
(in Japanese language)

2. Special geographic boundaries

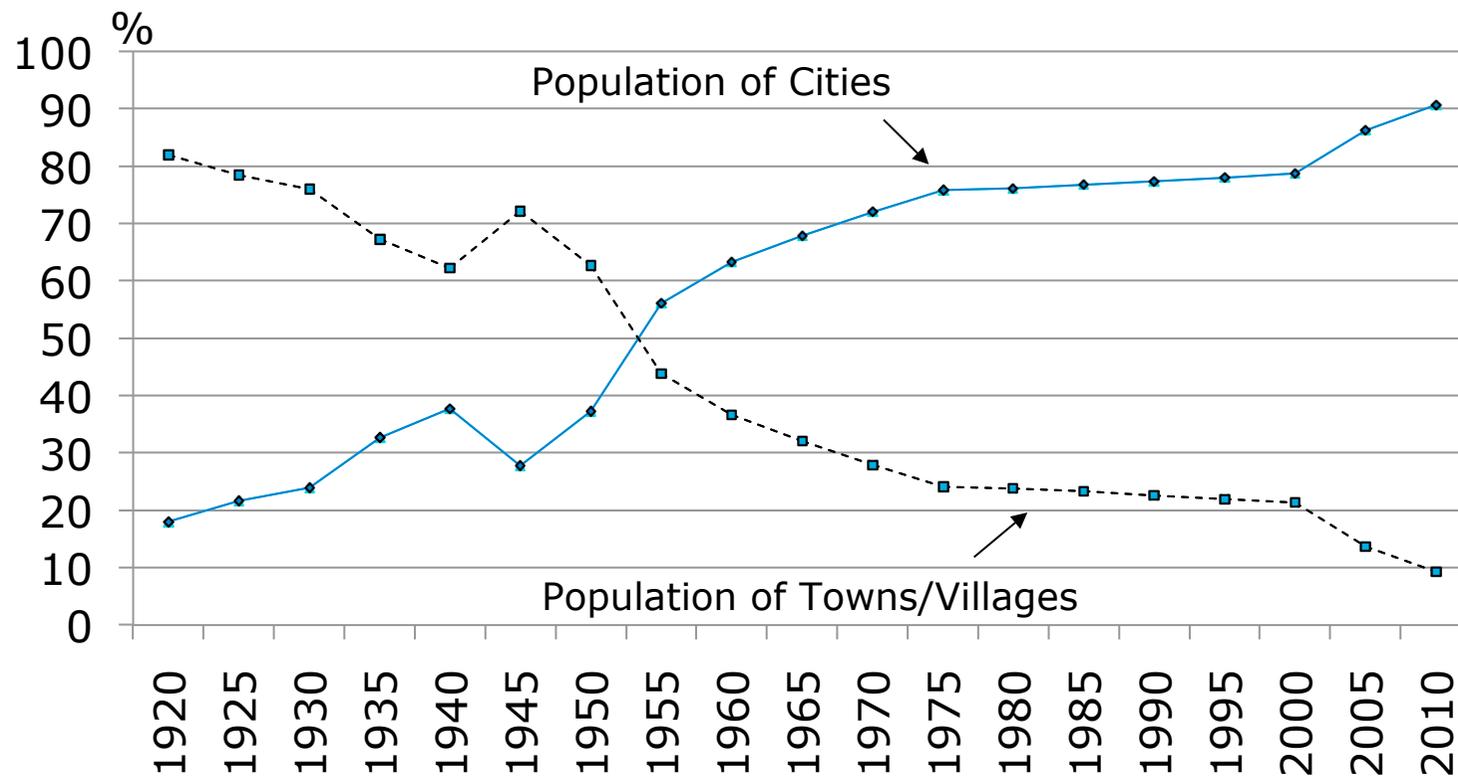
2.1. Densely Inhabited District (cont.)



2. Special geographic boundaries

2.1. Densely Inhabited District (cont.)

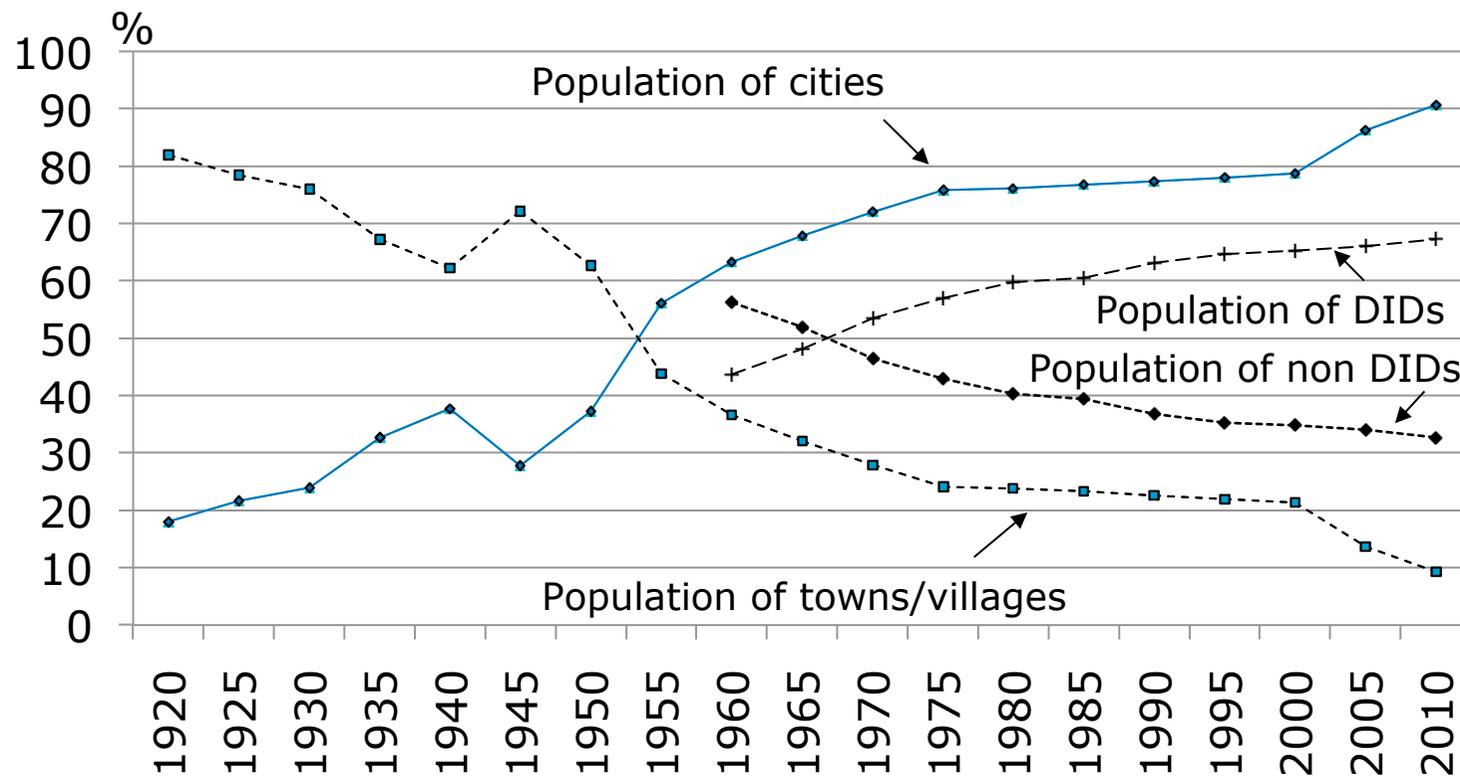
Population by type of municipality in proportion



2. Special geographic boundaries

2.1. Densely Inhabited District (cont.)

Population by type of municipality and DID



2. Special geographic boundaries

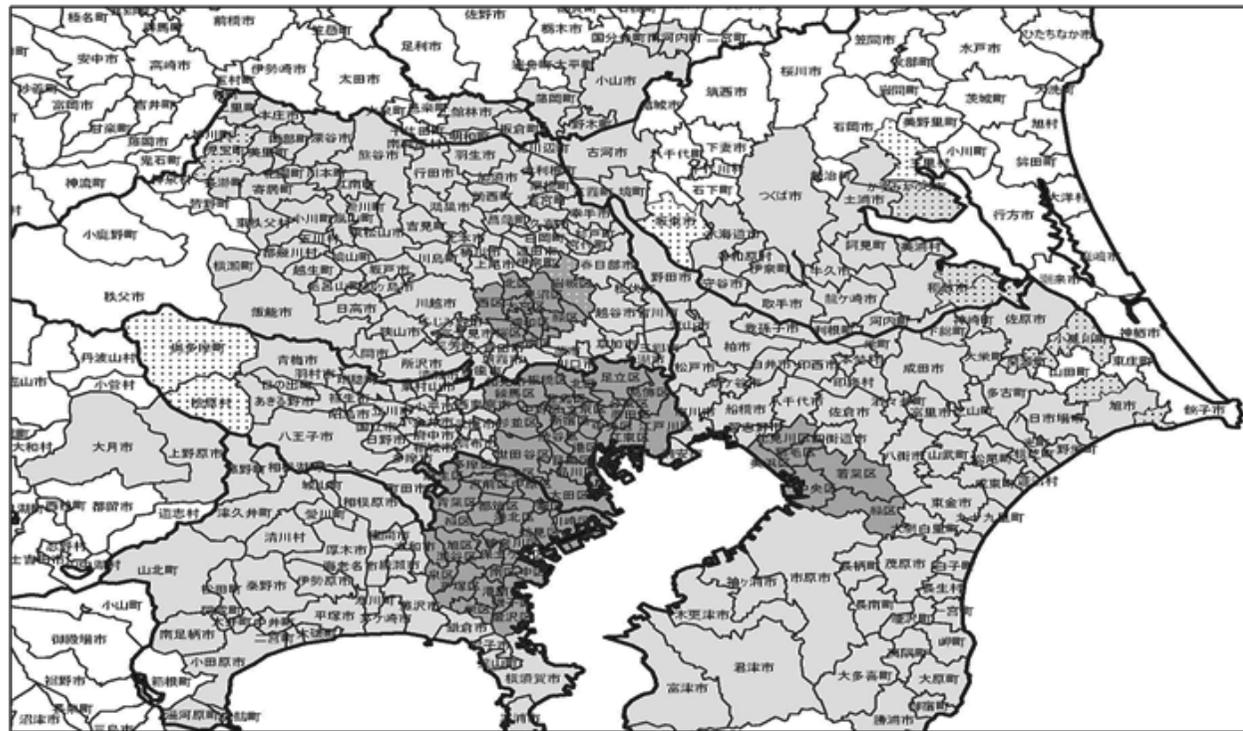
2.2. Metropolitan Area

- A MA is adjoining municipalities defined based on the result of Population Census for the purpose of forming broad urbanized areas across the administrative boundary.
- Each MA has "central city(ies)" and "surrounding areas" (cities, towns and villages) that have a high degree of economic and social integration.
- MAs have been established since 1960. Population Census 2010 identified 10 MAs.

2. Special geographic boundaries

2.2. Metropolitan Area (cont.)

- Kanto Metropolitan Area



凡例 Legend		都市圏地域 Metropolitan Area			
	中心地域		周辺地域	Central Area as before	} 中心市 Central Cities
	新規編入中心地域		新規編入周辺地域	Newly added Central Area	
			今回離脱した周辺地域	Surrounding Area as before	} 周辺市町村 Surrounding Area
				Newly added Surrounding Area	
				Deleted Surrounding Area	

2.Special geographic boundaries

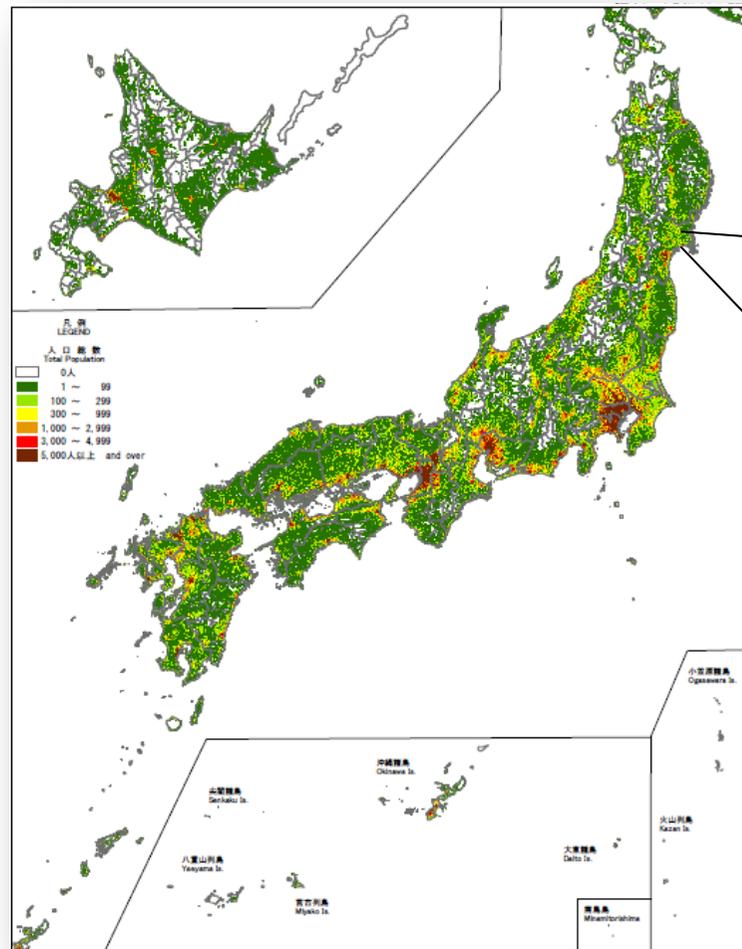
2.3. Grid Square

- Grid Square Statistics of Population Census (GPC) have been produced since 1970 by reorganizing the result of the Population Census
- GPC makes time series comparison easier than small area statistics based on administrative boundaries and C/R Blocks because the latter inevitably varies over time.
- "Standard Grid Square and Grid Square Code" which divides the whole area of Japan according to latitude and longitude is announced by government, and many small area statistics follow the format (economic census, agricultural census, environmental surveys, etc.)

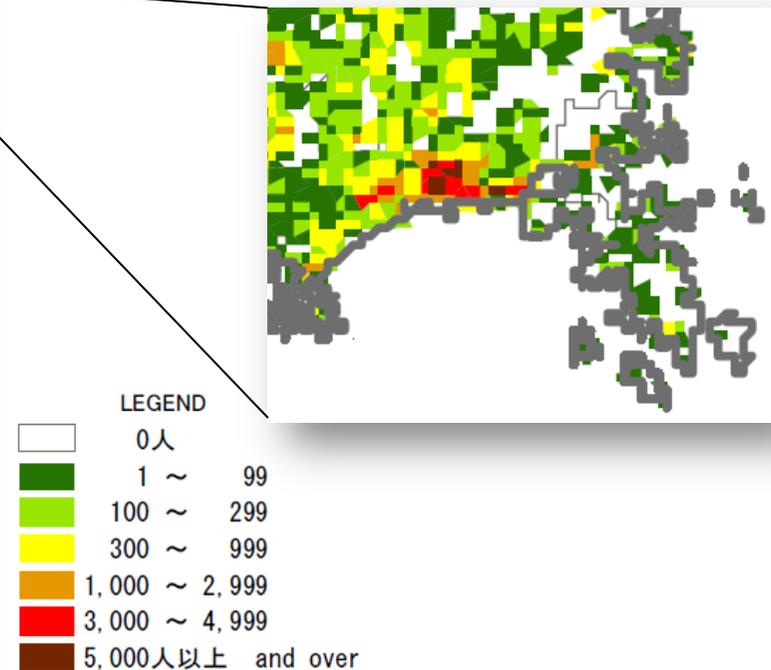
2. Special geographic boundaries

2.3. Grid Square (cont.)

Total Population, 2010 all Japan at Basic Grid Square level



A Basis Grid Square is a square about 1km on a side. There are aprx. 380,000 BGSs.



Thank you for your attention!



Thematic Map, e-Stat (Portal site of Official Statistics of Japan) demonstrates population by C/R Block and Grid Square.
<http://www.e-stat.go.jp/> (in Japanese language)