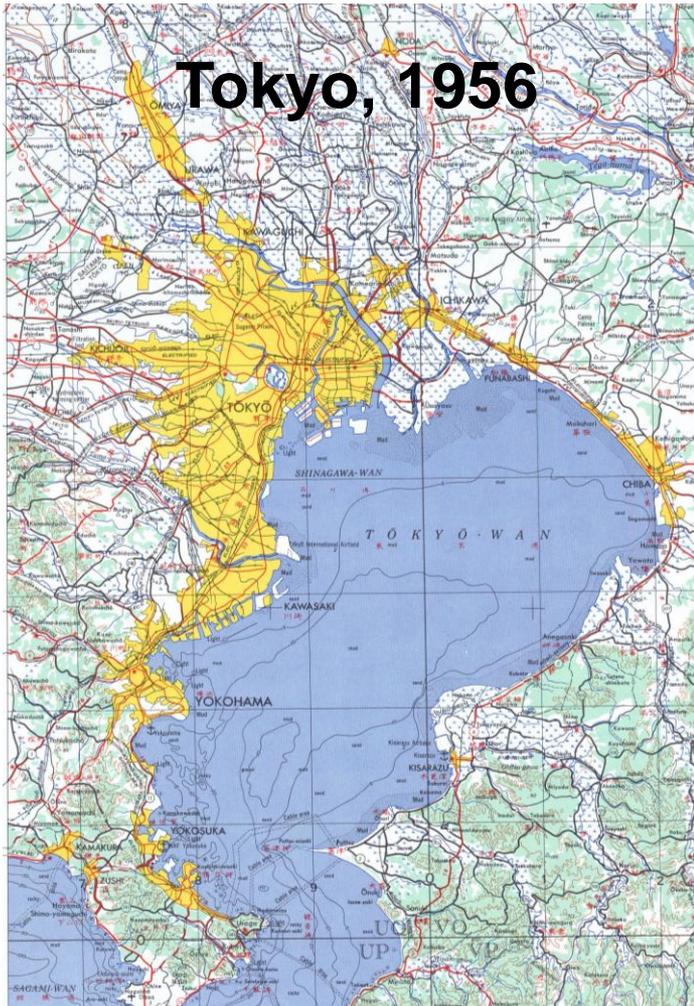


# Current and Future Operations In Megacities

## Virtual Terrain Walk (VTW)

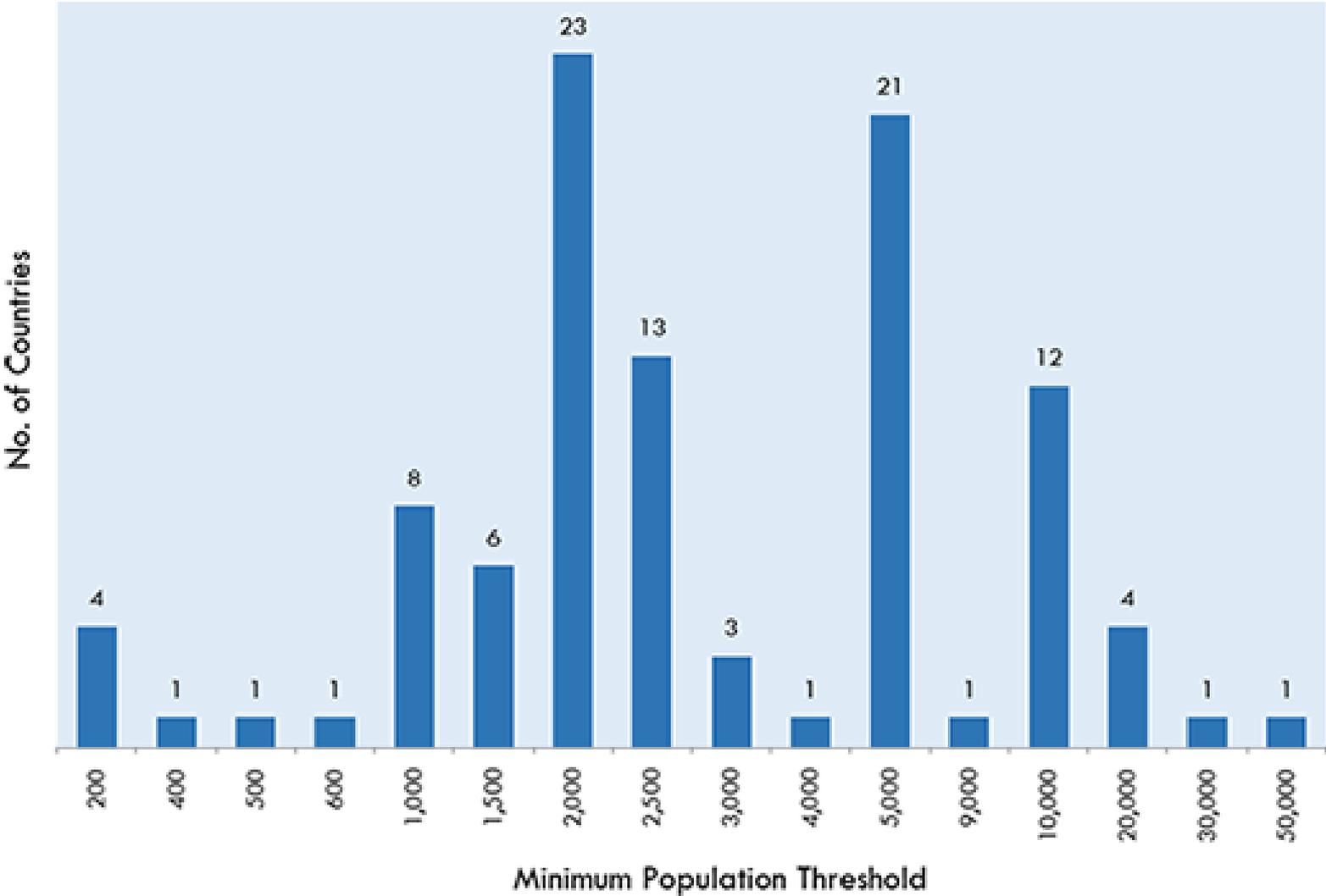


## Agenda

- Introduction
- Flows into, within, and out of Tokyo
  - Lunch
- Tokyo security considerations
  - Summary

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Ichigaya, Tokyo, Japan  
July 16, 2019

# How Countries around the World Define “Urban Area”



## *A Better Operational Definition = Additions to the List*

**Megacity: An urban area of extraordinary population size, geographic spread, physical and social complexity, interconnectedness, and similarly exceptional characteristics, to include influence with at least broader regional scope.**

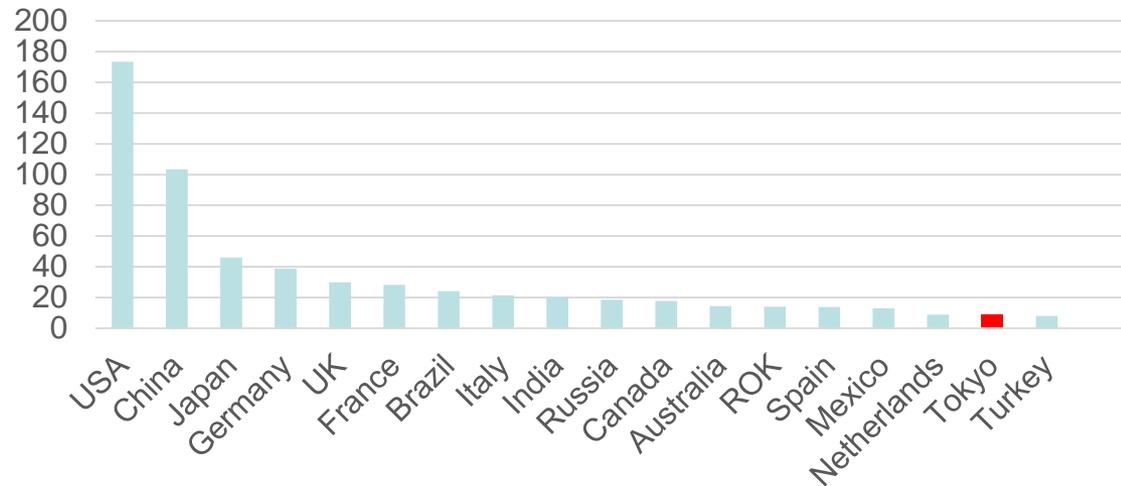
### **An example:**

**Singapore (2017 population ~ 6M)**

- **World's top oil bunkering (ship fueling) port by volume**
- **Second largest container port**
- **130,000 ships call annually**
- **Singapore Strait monitored by the country's Maritime and Port Authority's Port Operations Control Centre**

# Example: The Worldwide Reach of Megacity Tokyo

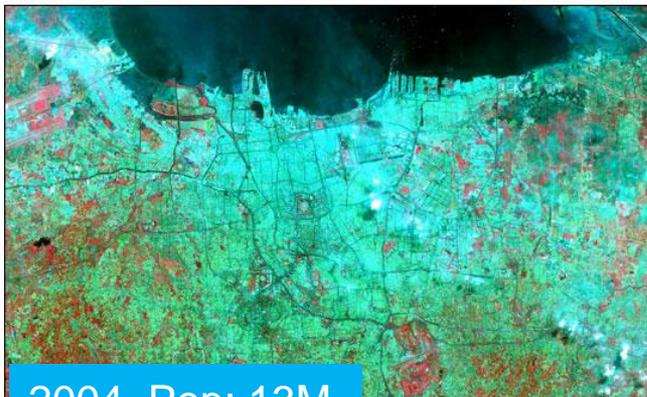
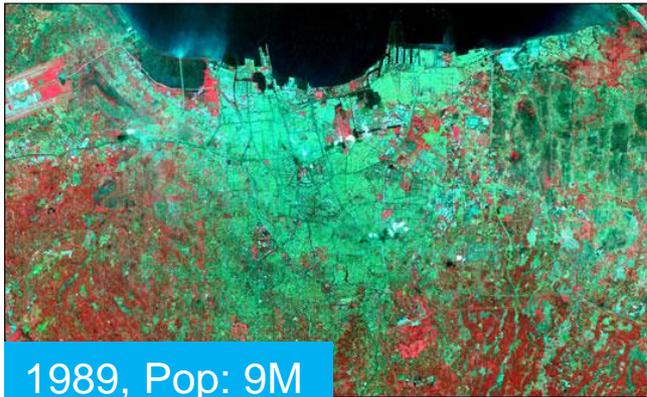
If a country, Tokyo would have 17<sup>th</sup> largest GDP in world



- Largest urban population in the world: 38,505,000 (2019)
- **34.7% of Japan's GDP (2015)**
- Ranked 5<sup>th</sup> in world as global financial center
- **29.8% of Japan's population (2016)\***
- 13.7% of country's employed persons (2010)
- 35.1% of national annual commercial sales (2014)
- 50.1% of corporations capitalized over 1B yen (2014)
- 76.6% of foreign countries' companies in Japan (2016)
- **Megacity is spread over multiple prefectures in addition to encompassing 23 wards and other urban authorities**

\* Japan 2016 population: 127M

# Jabodetabek: An Example of a Megacity Expanding to Overlap Multiple Jurisdictions



## Population and Geographic Spread of Jakarta over 28 years

Green or Blue: Urbanized  
Red or Brown: Vegetation  
(2018 population of Jakarta megacity:  
32,275,000)

“More people live in greater Jakarta than in Australia; its residents send out more tweets than those in any other city.... Millions of Jakartans live in slums....Traffic clogs the streets from dawn until well after nightfall.”

*The Economist*

# Our Notional Scenario for this VTW:

## A 7.3 Richter Scale Earthquake during the 2020 Summer Olympics

“Between 1970 and 2014, natural disasters accounted for more than 2 million deaths in the Asia-Pacific, 57 percent of the global total. [Former PACOM commander] Admiral Locklear routinely told his subordinate commanders, ‘While you’re here you may not have a conflict with another military, but you will have a natural disaster that you have to either assist in or be prepared to manage the consequences on the other side.’”

Timothy McGeehan,

“A War Plan Orange For Climate Change”



Damage from 1995 Kobe earthquake

# Natural and Manmade Disasters

- **Natural**

- Tokyo earthquakes
  - September 1, 1923 (7.9 on Richter scale)
    - **Over 140,000 killed**
    - 1M homeless
    - 300,000 Tokyo buildings destroyed
  - October 5, 1985 (6.2 on Richter scale)
    - **No deaths**

- **Manmade**

- 1995 Aum Shinrikyo sarin nerve agent attack
- 2011 Fukushima radiation threat

# MDO in Megacities: Flow, Power, Consequences

- Every city has “flow” that includes the rhythm and directions of daily life
- We will view flows into Tokyo, within the capital, and those out of the megacity
- In each case, we analyze five types of flows: (1) Water, (2) Power, (3) Expertise and labor (what we might call the “human tide”), (4) Supplies and services, and (5) Waste
- The British in Northern Ireland sought to recognize the “absence of the normal or presence of the abnormal”
- Imposing actions against the flow can create frictions

# History can help, but innovation is essential

**Tokyo in 1956**



**Tokyo in 2017**



# Improving Megacities Readiness: Initial Thoughts as We Progress Today

- **We need to expand our understanding of what constitutes a coalition**
  - More than military. More than government. Includes all relevant parties
- **We should adapt our training strategies for megacity HADR operations...and megacity operations in general**
  - Exercises and rehearsals should include substantive participation by military, other governmental, nongovernmental (NGO), inter-governmental (IGO), commercial, and other organizations as appropriate
  - Exercise operational and strategic level decision-making
- **View a megacity as a system *and* subsystem**
  - Account for 2<sup>nd</sup> and higher order effects

