

# Current and Future Operations In Megacities

## Virtual Terrain Walk (VTW)

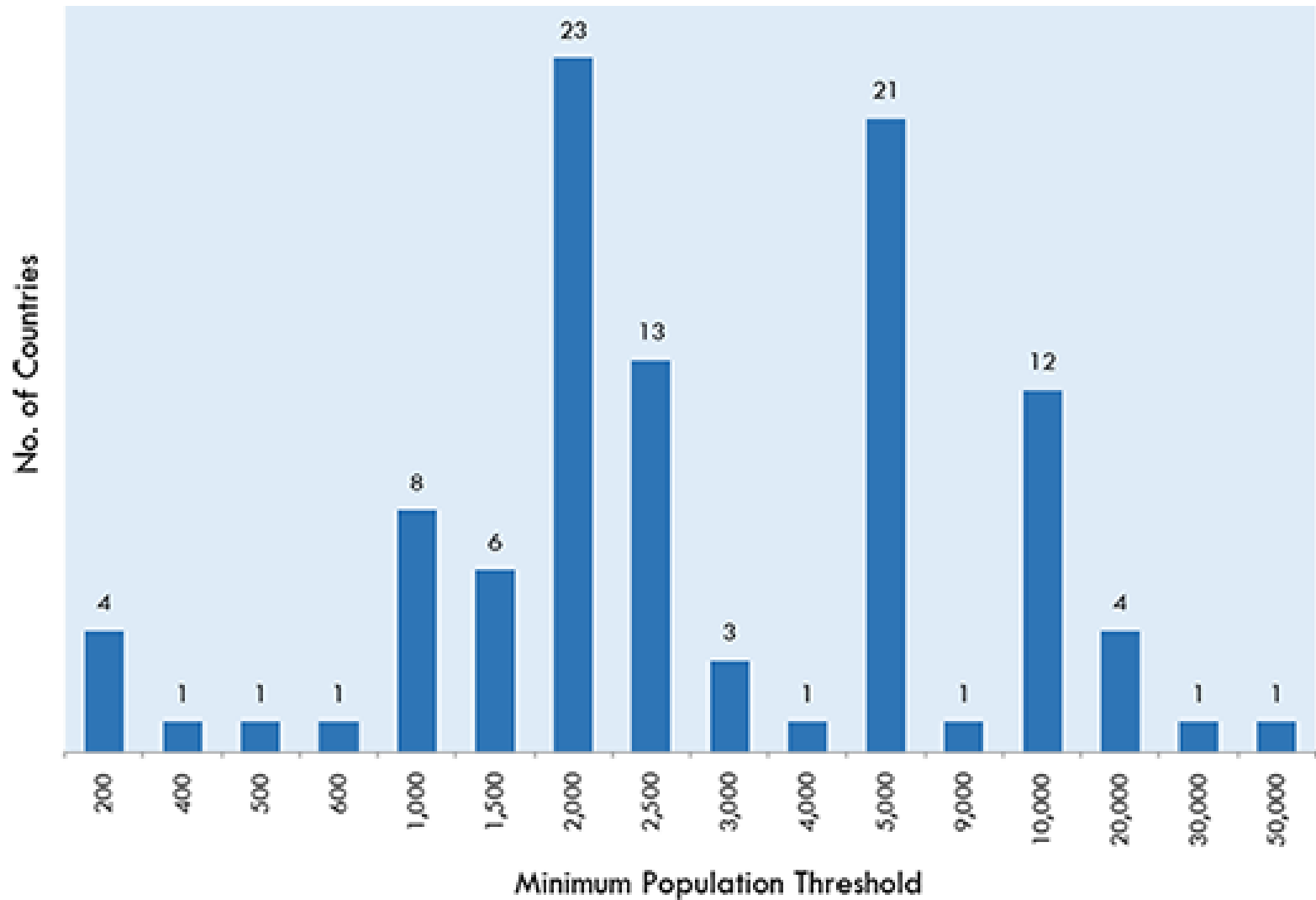


## Agenda

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

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# 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.

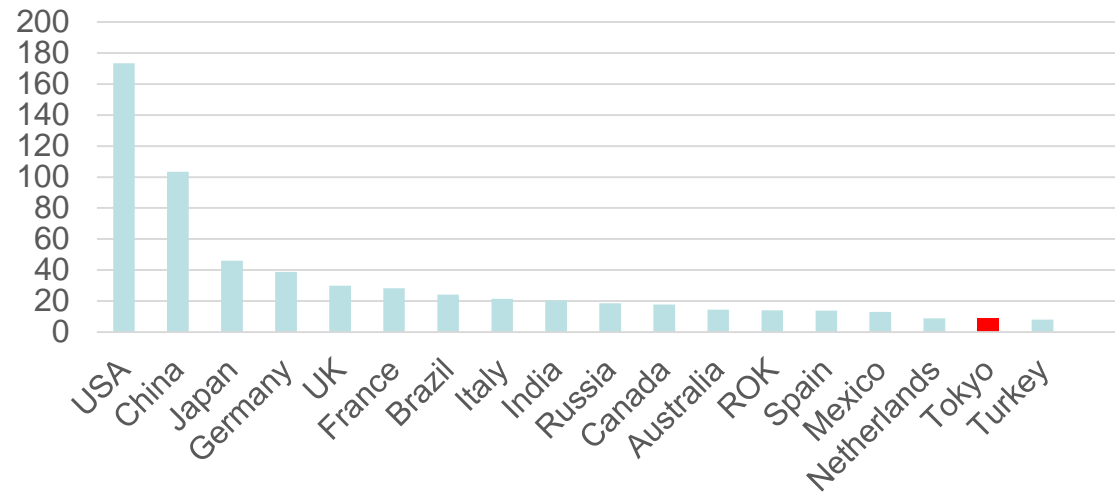
### **An example:**

**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

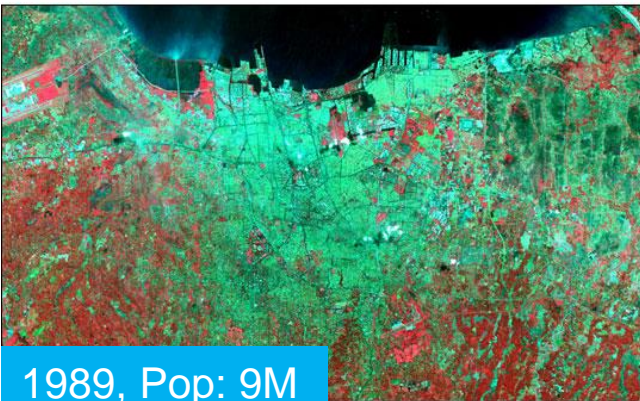
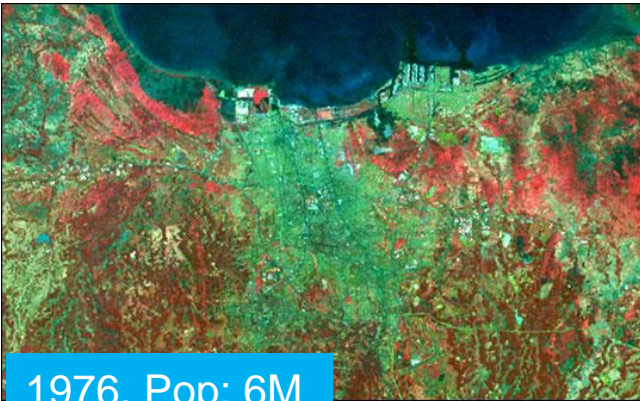


- Largest urban population in the world: 38,505,000 (2019)
- **34.7% of Japan's GDP (2015)**
- Ranked 5<sup>th</sup> in world as global financial center
- 29.8% of Japan's population (2016)\*
- 13.7% of country's employed persons (2010)
- 35.1% of national annual commercial sales (2014)
- 50.1% of corporations 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

