

# An Overview of Japan's Bioeconomy Strategy and Greater Tokyo Biocommunity



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## Japan's Bioeconomy Strategy

## OECD : “The Bioeconomy to 2030” (2009)

- The global biotechnology market is expected to reach approximately 1.6 trillion USD by 2030 (Industrial : 39%, Agriculture: 36%, Health: 25%.)

## EU: “Innovation for Sustainable Growth: A Bioeconomy for Europe” (2012)

## US: “National Bioeconomy Blueprint” (2012)

## JAPAN: The Bioeconomy Strategy (2019)

49 countries have developed strategies related to the bioeconomy.



Ref : METI Subcommittee on Biotechnology of committee on Commerce, Distribution and Information

## Realizing “World’s Most Advanced Bioeconomy” Society by 2030

### Expansion of market

Target: A total market size of \$840 billion in 2030 from current \$550 billion

### Formation of biocommunity

Building value chains in each market area by creating diverse and unique communities across Japan and by supporting their continued growth.

### Promotion of data linkage

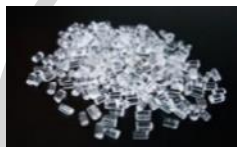
Creating an environment that allows for broad and flexible collaboration, including in different fields.

**Aiming for a total market size of US\$840 billion in 2030**

## White-Bio

### Bio-manufacturing

- ✓ Engineering biology-based biofoundry & biorefinery
  - ✓ R&D support for bioplastics
- \$295 Bil. (2018) → **\$485 Bil.**



Plant-based car materials



Biodegradable plastics

(Biomaterials, Bioplastics, Biofoundry <Industry & food production>)

Target setting for each market area

Formulation of initiatives by backcasting

## Green-Bio

### Primary production

- ✓ Automated agriculture, employment of latest genome editing technology-based breeding
  - ✓ Large wooden architecture design & construction
- \$7.3 Bil. (2018) → **\$25 Bil.**



Safe, sound and highly functional food



Wooden skyscraper

(Biopharmaceutical, regenerative medicine, cell/gene therapy, etc.)

(Sustainable primary production system & smart forestry)

## Healthcare

## Red-Bio

- ✓ Biopharmaceuticals (incl. vaccines) development & production
  - ✓ Large-scale genome database
- \$240 Bil. (2018) → **\$330 Bil.**



Innovational drugs



Digital health

# Japan's Leading Biocommunity

- Form an organic network with regional centers, with the international center at the core.
- Activate distinctive bio-industries throughout the country and promote the accumulation of excellent human resources and investment from Japan and abroad while also connecting with global clusters.



Tsuruoka Science Park, Keio Univ., Tsuruoka City, Spiber Inc. etc...

Hokkaido Univ., Hokkaido Government, NOASTEC etc...

Nagaoka City, Nagaoka Univ. of Tech., Natl. Inst. of Tech. Nagaoka College, JA etc...

Kyoto Univ., iPS Res. Inst., RIKEN, Osaka Univ., Kobe Univ., KinkiBio etc...

Fukuoka Pref., Kurume City, Kyushu Univ., Kurume Univ., BONAC corporation etc...

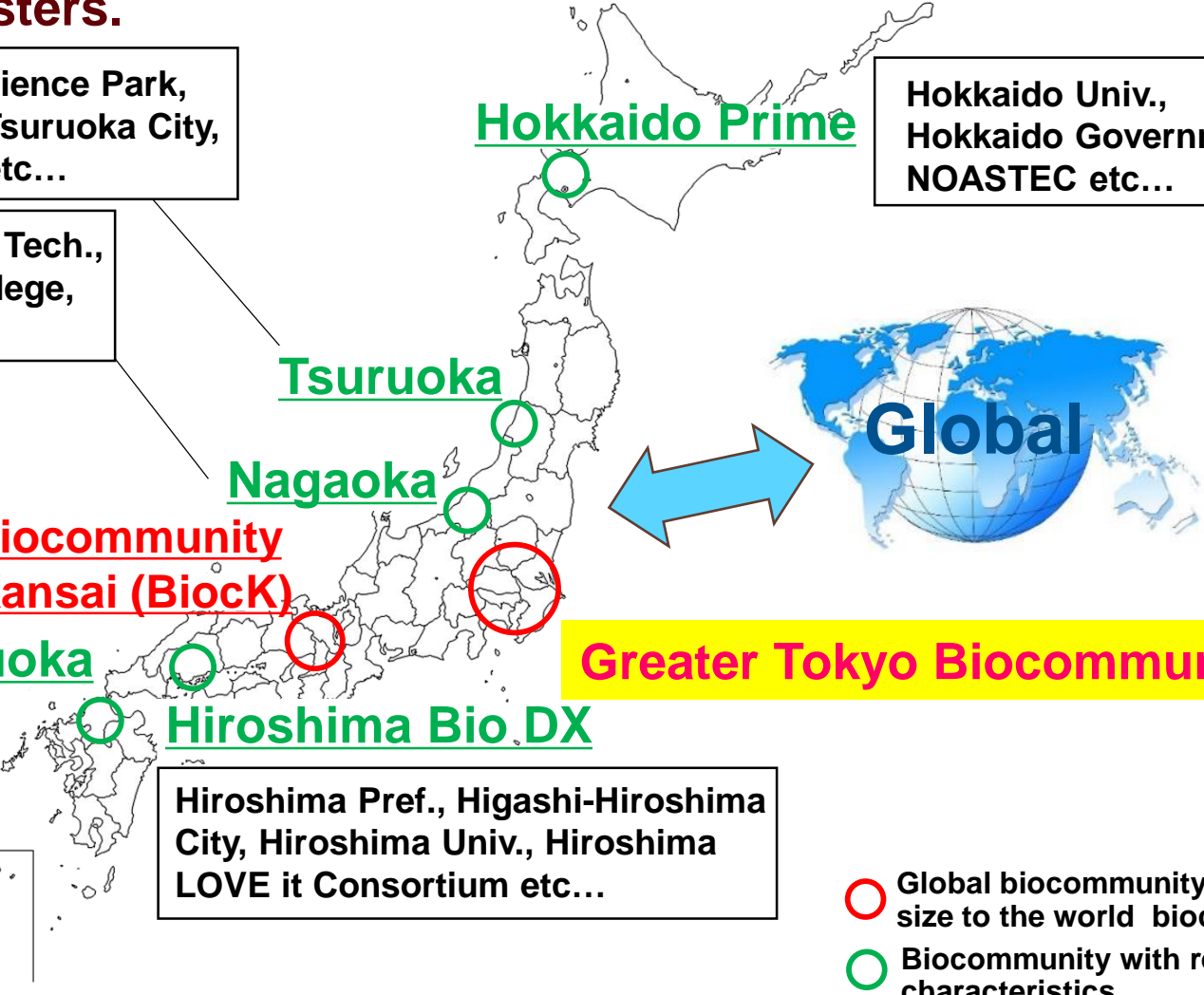
OIST, Meisho Univ., Ryukyu Univ., Natl. Inst. of Tech Okinawa College, Okinawa General Bureau etc...

Okinawa

Hiroshima Pref., Higashi-Hiroshima City, Hiroshima Univ., Hiroshima LOVE it Consortium etc...

Biocommunity Kansai (BiocK)

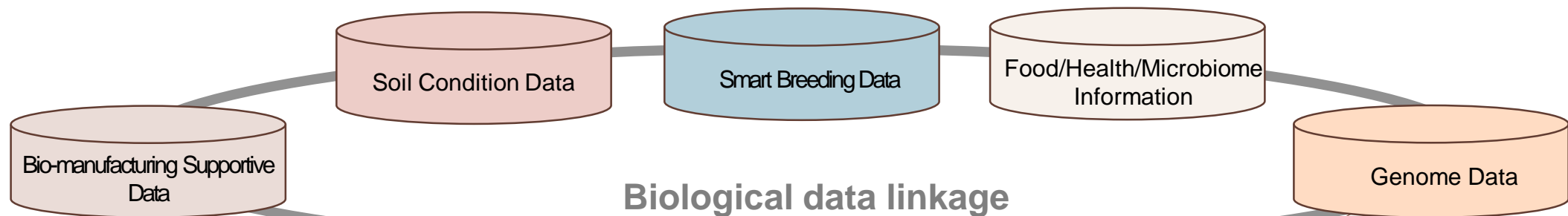
**Greater Tokyo Biocommunity (GTB)**



- Global biocommunity with comparable size to the world bioclusters
- Biocommunity with regional characteristics

# Promotion of Data Linkage

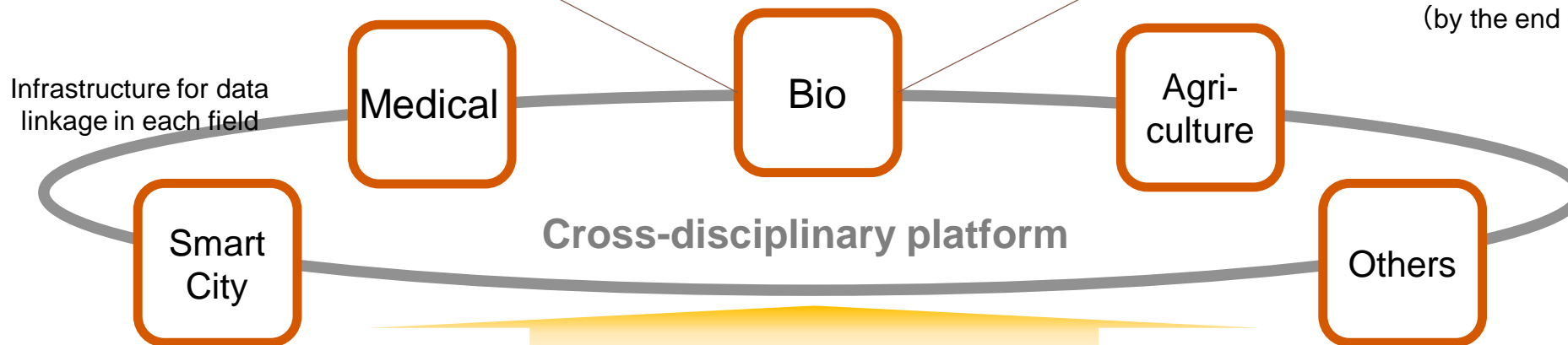
➤ Establish an environment for data linkage based on the governmental common measures



**Develop and enrich the data platform for R&D projects**

**+ Provide guidelines for data linkage and usage**

(by the end of FY2022)



**Governmental Data Strategy**

- Prepare tool (API, data catalogues), coordinate rules
- Coordinate repository, etc.



Greater  
Tokyo  
Biocommunity

# Greater Tokyo Biocommunity (GTB)



## IPs & Publications

### The Top 100 Science & Technology Clusters 2022 (only Top 10 were shown)

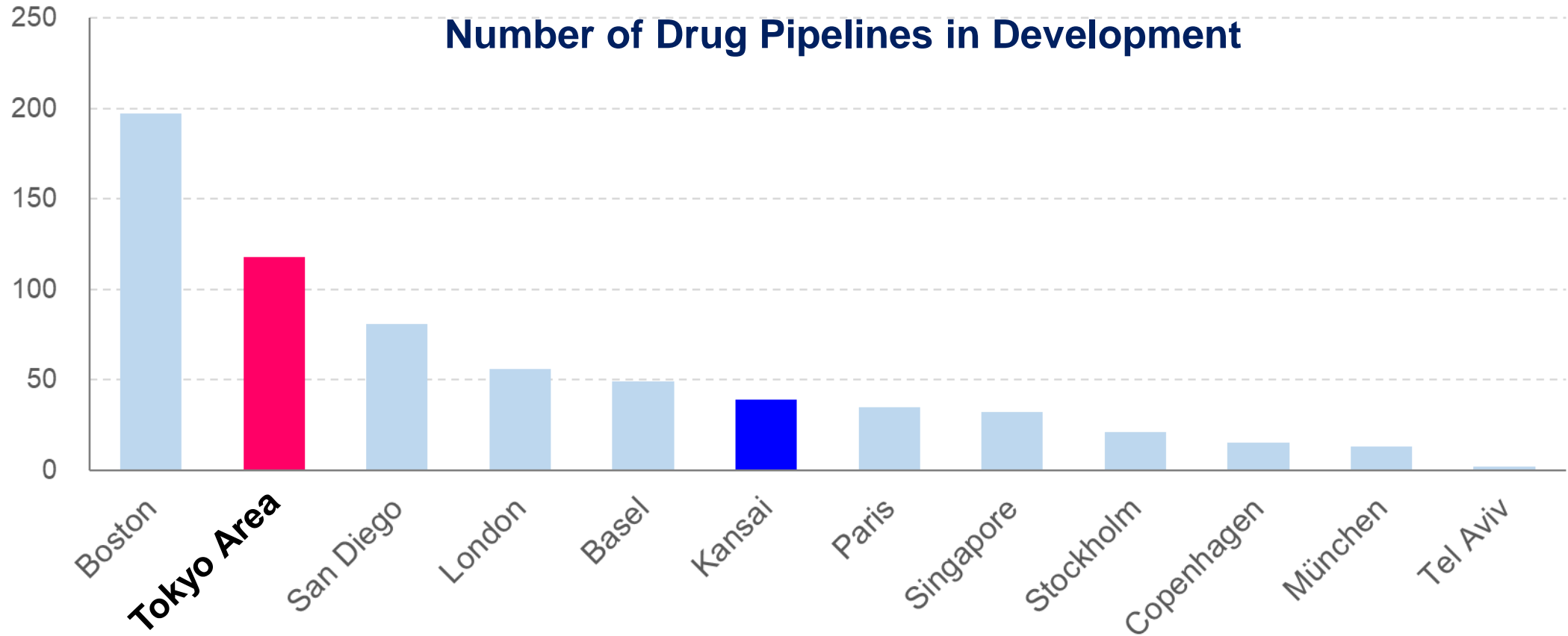
Rank	Cluster	Country	Share of total PCT filings <sup>*1</sup> (%)	Share of total publications <sup>*2</sup> (%)	Total (%)
1	<b>Tokyo-Yokohama</b>	Japan	10.7	1.6	12.3
2	Shenzhen-Hong Kong-Guangzhou	China/Hong Kong	8.2	1.9	10.1
3	Beijing	China	2.8	3.7	6.5
4	Seoul	Korea	4.0	1.8	5.8
5	San Jose-San Francisco	US	3.7	0.8	4.6
6	Shanghai-Suzhou	China	2.0	2.1	4.1
7	<b>Osaka-Kobe-Kyoto</b>	Japan	3.0	0.7	3.7
8	Boston-Cambridge	US	1.4	1.0	2.4
9	New York City	US	1.1	1.0	2.2
10	Paris	France	1.2	0.9	2.1

\*1. Inventors listed in patent applications under WIPO's Patent Cooperation Treaty (PCT), spanning years 2016 to 2020

\*2. Authors listed in scientific publications in the Web of Science's Science Citation Index Expanded (SCIE) and covering the same period.

From WIPO "Global Innovation Index 2022"

# Potential of Tokyo Area (2)



Bio-related drug pipelines in the developmental stages from preclinical to Phase III were counted (as of the end of 2021).

Data searched with BioMedTracker and “Asu-no-sinyaku” by Deloitte Tohmatsu

## 5. Kawasaki Area

The Open Innovation City with Direct Access to Haneda Airport



## 3. HOTS HILL Area

The Largest Concentration of Academia in GTB



From Press Release

## 4. Nihonbashi Area

Global Life Science Bbusiness Hub in the Heart of Tokyo



From LINK-J HP

## 1. Tsukuba Area

The Biggest Science City with Various Institutions

From brochure



## 6. Yokohama Area

Innovative City Focusing on Health and Medical Care



## 7. Shonan Area

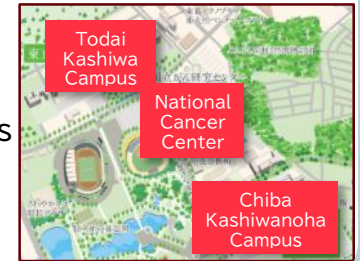
An Innovation Hub with the Largest Wet Lab, in Collaboration with Neighbouring Hospitals



Shonan Health Innovation Park

## 2. Kashiwanoha Area

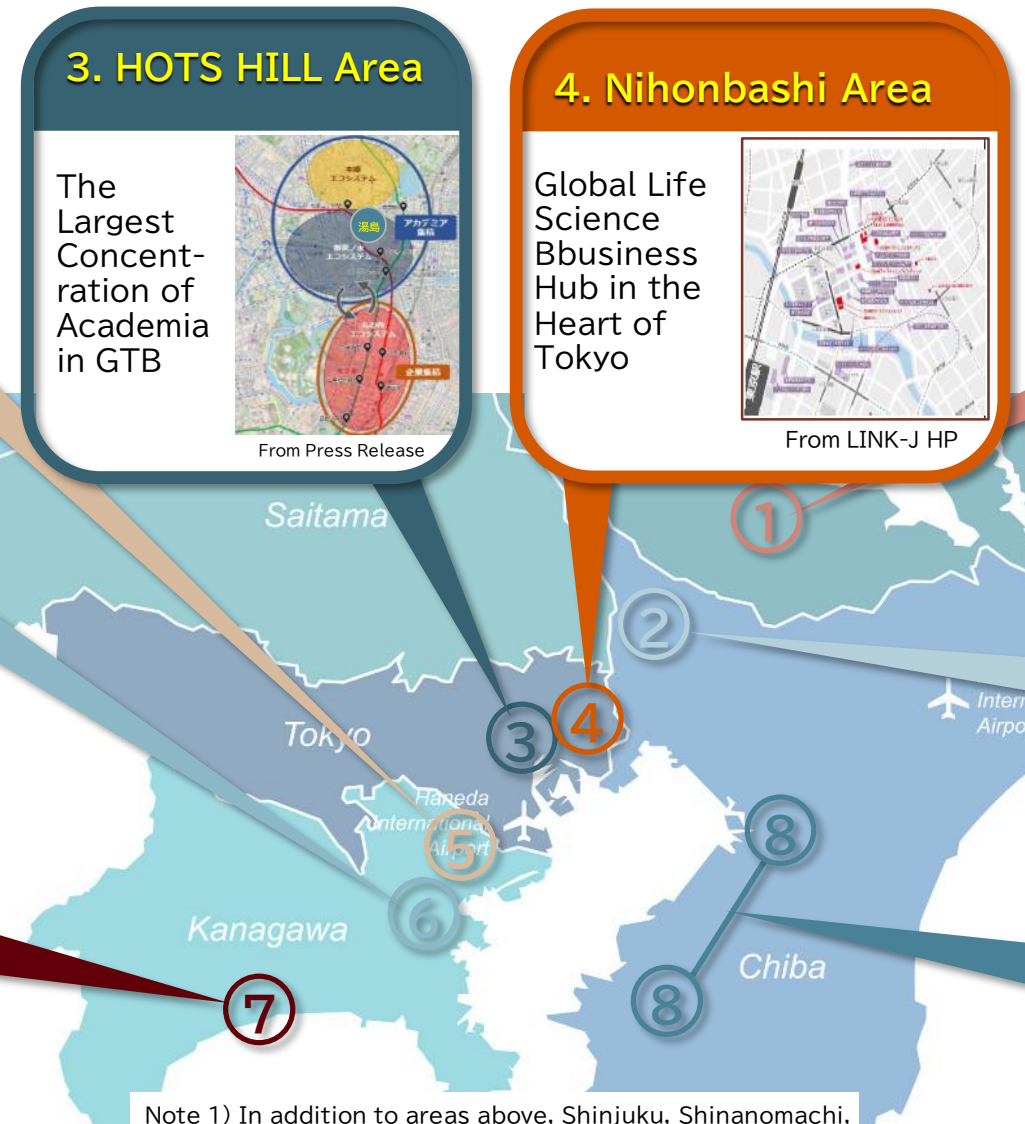
The Smart City with Top-Tier Universities and the National Cancer Center



From Kashiwanoha Smart CityHP

## 8. Chiba/Kazusa Area

The Research Base of Plant and Immunological Medicare



Note 1) In addition to areas above, Shinjuku, Shinanomachi, Waseda, Tsukiji, Daiba, Tokorozawa, and Wako are emerging areas.  
 Note 2) As new areas are developed, area definition may be restructured.

# Structure of GTB Council

## GTB council

**Chair: Mr. Osamu Nagayama (President, JBA)**

**Vice-Chair:**

**Mr. Manabu Miyasaka (Vice-Governor of Tokyo Metropolitan Government)**

**Dr. Toshiya Watanabe (Vice-President, Univ. of Tokyo)**



Mr. Nagayama



Mr. Miyasaka



Dr. Watanabe

- Established in 2021
- Three chairs are from business, academia and government.

**Industries**

**Related organizations**

**GTB practical member meeting**

**Working group**

**Academia**

**Financial & investment institutions**

In operating the GTB Council, participants will be convened at the working level to discuss operational policies and specific initiatives in a practical manner.

Members were selected from the GTB Council organizations to discuss detailed agenda items in each area, including specific actions to be taken. Established as needed.

**Local governments**

**Collaborations**

**Advisor**

**Observer (Government)**

**GTB supporter**

**Miscellaneous**

Regional biocommunities, The Tokyo Consortium - Startup Ecosystem, COI-NEXT "Tsukuba Digital-Bio International Center" etc.

**GTB secretariat (Japan Bioindustry Association)**

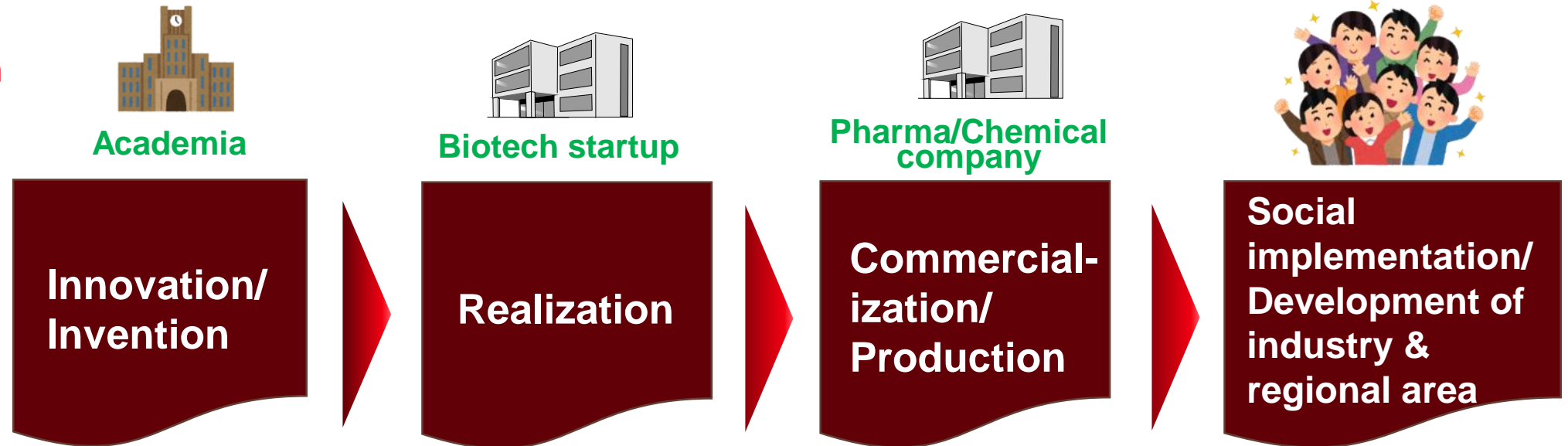
**Secretary General: Mr. Yoshiaki Tsukamoto (Executive Director, JBA)**



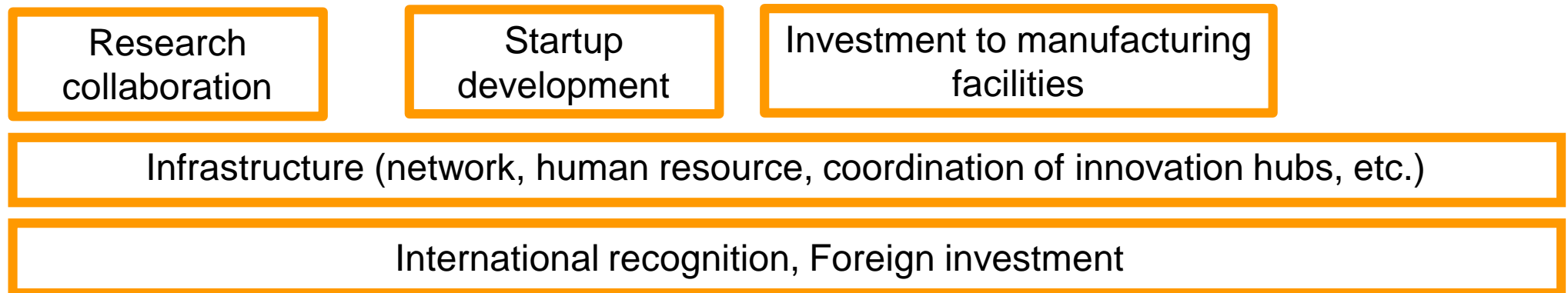
# GTB: Goal and Approaches

**Goal** Make the Tokyo Area one of world's premier innovation centers

**Value chain**

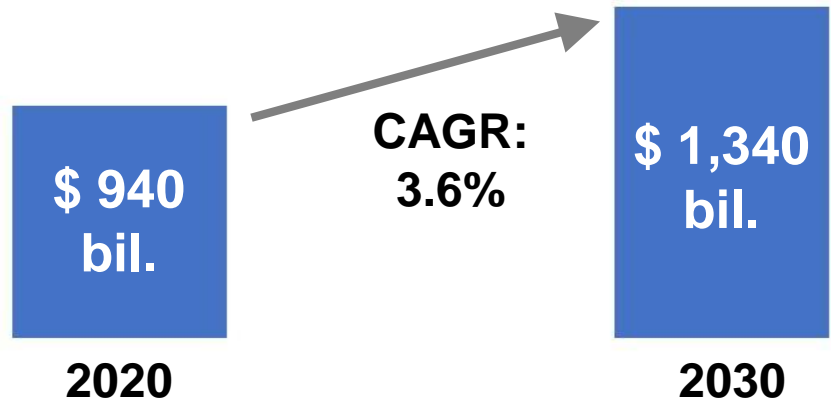


**Approaches**



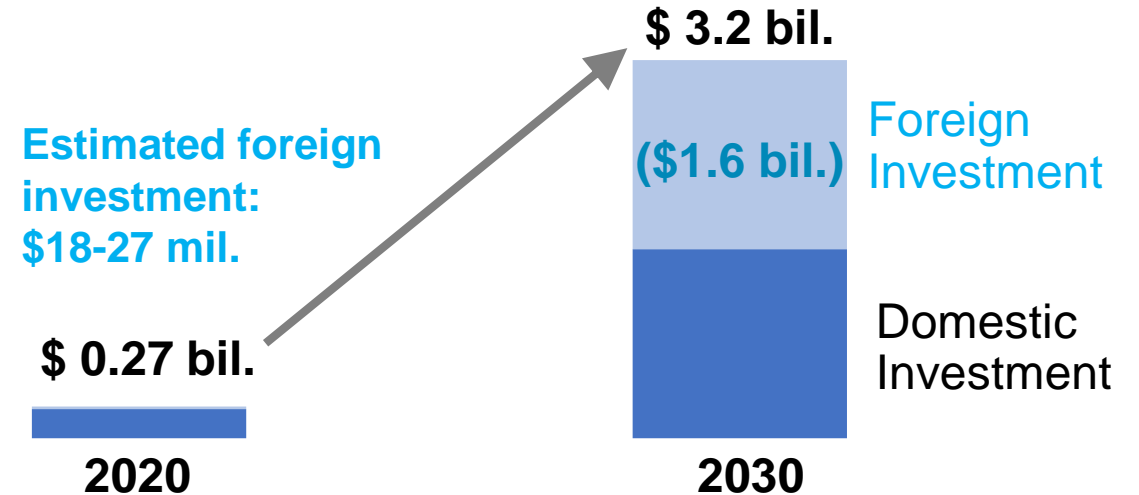
# What GTB aims for: KPI

## Main KPI: Market Expansion



Market : Total of annual sales of the companies in Tokyo area with the membership of 5 bio-related associations<sup>1)</sup>

## Supplemental KPI (1): Investment to biotech startups



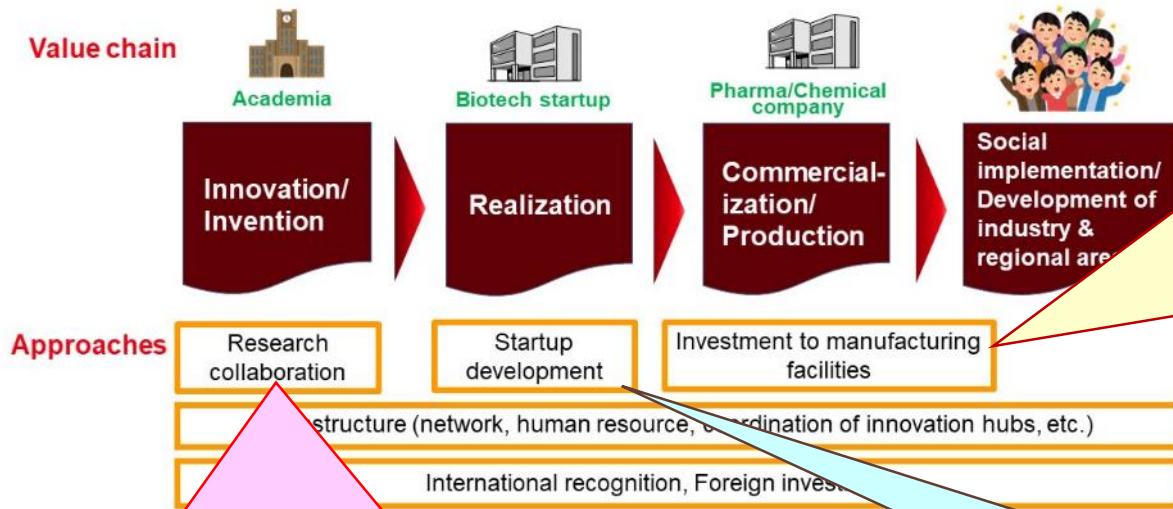
## Supplemental KPI (2): Research collaboration & Ranking

- ✓ Number of new large collaborative research projects adopted: 5 to 10 per year (2030)
- ✓ Startup Genome's **Startup Ecosystem Ranking (Life Science Sector)**: within the **5<sup>th</sup> prize** (2030) from the **25<sup>th</sup> prize** (2021)

1): Japan Bioindustry Association, Japan Pharmaceutical Manufacturers Association, Forum for Innovative Regenerative Medicine, SAMURAI Biotech Association, Japan Association for Techno-innovation in Agriculture, Forestry & Fishery  
Annual sales are based on the available information on most recent full year results of each company (as of January, 2022)

# Recent Typical Progress

**Goal** Make the Tokyo Area one of world's premier innovation centers



**\$2.1 Bil. of governmental investment for manufacturing facilities of biopharmaceuticals**

Subsidy for the development of biopharmaceutical production sites to strengthen the vaccine production system:  
Sites determined at the end of September

**20 research collaboration projects started in GTB and Kansai Areas**

National projects in GTB:

Tsukuba Digital Bio International Center (JST), Wellbeing Healthcommons Collaboration Hubs (JST), Bioeconomy Innovation Hub to Realize Carbon Cycle Society (JST), Biomanufacturing (NEDO), Smartcell industry (NEDO), Industrialization of medical device (AMED), Next-generation nucleic acid medicine (AMED)

**\$450 Mil. of governmental investment for Japanese pharmaceutical startup companies**

Governmental accreditation of and subsidy for venture capitals to support innovative pharmaceutical startups

# Tools for sharing activities of participating organizations

## GTB website

[https://note.com/gtb\\_com/m/m5447989128fd](https://note.com/gtb_com/m/m5447989128fd)



### Greater Tokyo Biocommunity\_EN



Greater Tokyo Biocommunity (GTB) is an industry-academia-government network for the biotechnology industry in greater Tokyo area. Japan Bioindustry Association (JBA) serves as the secretariat.



## Twitter

<https://twitter.com/TokyoGreater>



GTB

プロフィールを編集

### Greater Tokyo Biocommunity (GTB)

@TokyoGreater

東京圏におけるバイオ産業の産学官ネットワークです。バイオインダストリー協会が事務局を務めています。

GTB is an industry-academia-government network for the biotechnology industry in greater Tokyo area.

📍 Tokyo 🔗 [note.com/gtb\\_com/](https://note.com/gtb_com/) 📅 2021年6月からTwitterを利用しています

38 フォロー中 108 フォロワー





# See you next time at BioJapan 2023 !



**October 11** Wed. - **13** Fri., 2023

Pacifico Yokohama

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