



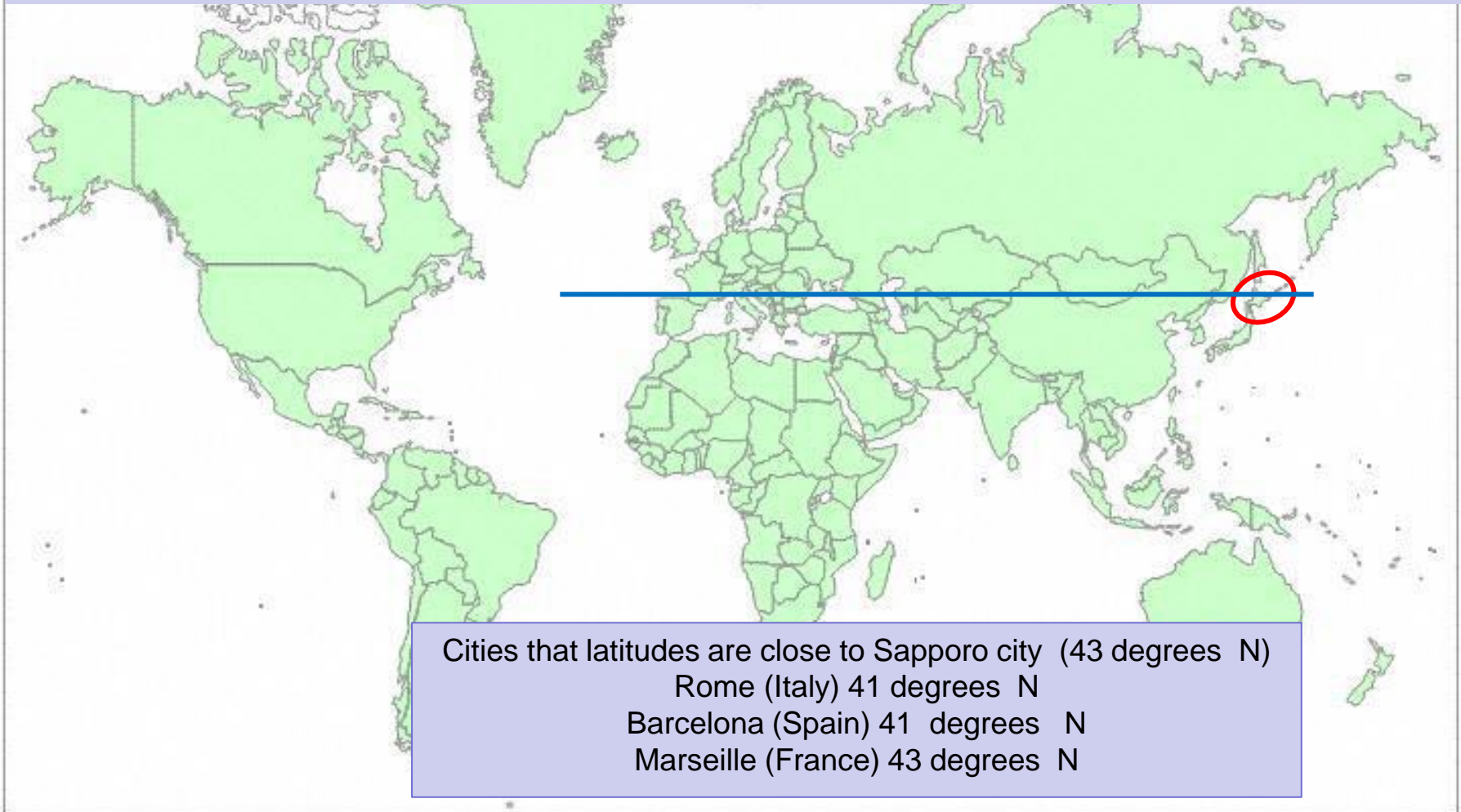
The industry in Hokkaido and its approach to space industry

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1. Location of Hokkaido

- Hokkaido locates in the northern part of Japan.
- Its latitude is in the vicinity of 41 to 45 degrees north, the same latitude as the southern part of Europe.



2. Climate of Hokkaido


- It is a refreshing area in Japan and has much snow in winter.
- The clarity and difference of the four seasons highlights the beauty of nature scenery.



3. The area and population of Hokkaido

- The area of Hokkaido is similar size to Austria (83,871 km²)
- The population of Hokkaido is similar size to Finland (5.5 million)

Area 83,450km² Population 5.4 Million People

A map of the island of Hokkaido, Japan, colored in light green. A red circle marks the location of Sapporo on the western coast. A callout box points from the map to the statistics above.

| Country | Population | Area |
|----------|---------------|------------------------|
| Germany | 82.7 million | 357,022km ² |
| France | 64.6 million | 551,500km ² |
| Italy | 60.7 million | 301,340km ² |
| Spain | 46.3 million | 505,370km ² |
| Slovenia | 2.1 million | 20,273km ² |
| Japan | 126.9 million | 377,915km ² |

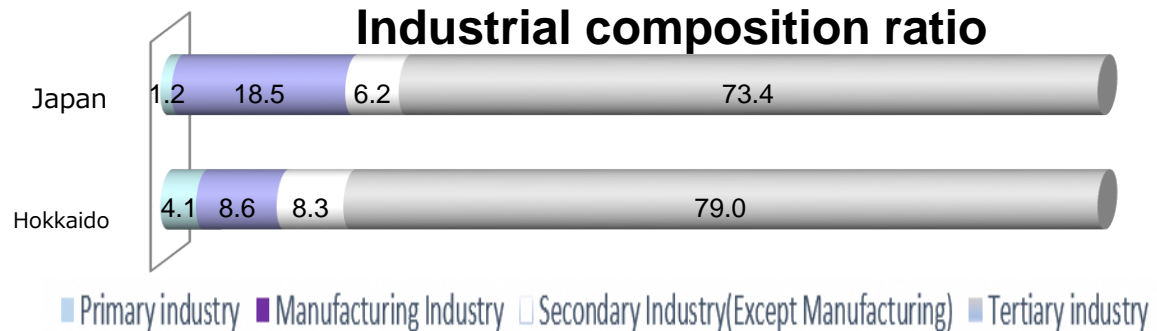
Sapporo City 1.9 M
Paris 2.1 M
Budapest 1.8 M
Barcelona 1.5 M

4. Scale and structure of Hokkaido industry

- Gross Product of Hokkaido is US\$171billion (2014FY)
- Service industry accounts for 80%. The agriculture, forestry and fishery industry is about 4%, which is more than 3 times compared to the whole Japan

Nominal Gross Domestic Product (2016)

| Country | NGDP |
|----------|------------|
| Germany | US\$3,466B |
| France | US\$2,463B |
| Italy | US\$1,850B |
| Spain | US\$1,232B |
| Slovenia | US\$44B |
| Japan | US\$4,938B |



Major industries in Hokkaido and its scale

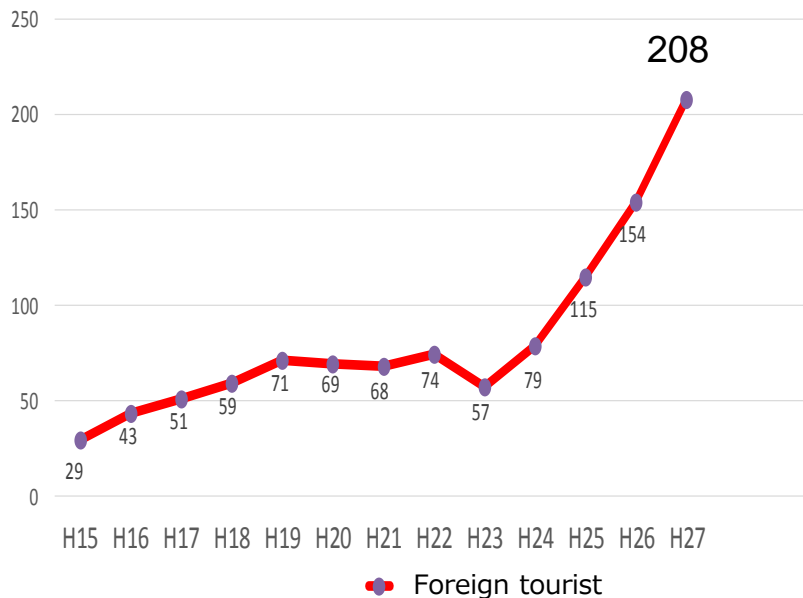
| | |
|-----------------------|---------------------|
| Tourism | Consumption US\$12B |
| Food related industry | Shipment US\$18B |
| Agriculture | Output US\$11B |
| Fishing industry | Production US\$2.9B |
| IT industry | Sales US\$3.9B |

5. Major industries in Hokkaido

(1) Tourism

- Popular tourist spot in Japan. Tourists from overseas, especially in Asia, have increased sharply. 2.08 million visited in 2015.
- Its snow quality attracts many skiers. A lot of Europeans and Australians are enjoying skiing.

Foreign tourist(Ten Thousands)



5. Major industries in Hokkaido

(2) Food related industry

- Hokkaido attracts people by its rich food. Its food is popular as “Hokkaido” brand in overseas, especially in Asian countries.
- Exports to overseas are expanding mainly fishery products and fishery processed products. (Export amount: US\$0.7B, FY2016)

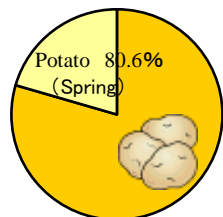


5. Major industries in Hokkaido

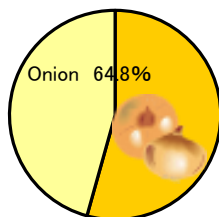
(3) Agriculture

- Both agricultural output (US \$ 11 B) and arable land area (1.15 million ha) are the largest in Japan. Hokkaido is one of the leading food supply areas in Japan
- Management farmland area per management unit is 27ha (maximum in Japan)

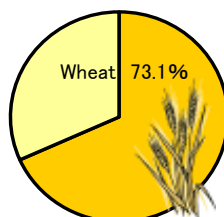
Production volume (cultivated area) of major crops in Hokkaido and Share of production in Japan.



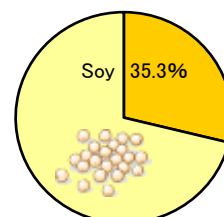
1.907M tons (51 Thousands ha)



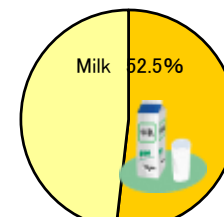
0.819 M tons (140 Thousands ha)



0.731 M tons (123 Thousands ha)



0.086 M tons (34 Thousands ha)



3.871 M tons (0.792M Cows)



5. Major industries in Hokkaido

(3) Agriculture ~ Tokachi district

- One of the leading agricultural area in Hokkaido (Agricultural output US\$3.0B)
- Major products are wheat, beans, beets, potatoes, dairy, beef cattle.
- Management farmland area per management unit is 42ha.
- Large-scale, mechanized, productive agriculture have been developed.



5. Major industries in Hokkaido

(4) Fishing industry

- Having a rich fishing ground, it has the largest catch in the country.(US\$2.9B)
- Major fish species are scallop, walleye pollock, salmon, kelp etc.



5. Major industries in Hokkaido

(5) IT industry

- The IT industry in Hokkaido is US \$ 3.9 B in sales.
- IT companies are concentrated mainly in Sapporo, and various activities have been developing.



Sapporo Techno Park



Convention Event by IT companies in Hokkaido
2017.10.5~10.15

6. Approach to space industry in Hokkaido (1) Small rocket development

- Hokkaido is at the forefront of small rocket development by private companies in Japan.
- Interstellar Technologies launched small rocket, aiming for an altitude of 100km, on 30 July 2017 for the first time in Japanese private company.



CAMUI rocket

The University of Hokkaido, Uematsu Electric Co., Ltd.
(Maximum altitude reached: 8 km)



**Image of observation rocket
by Interstellar Technologies**

6. Approach to space industry in Hokkaido

(2) Candidate location for launch site - Taiki Town

- It is a suitable location for rocket launch having open area to the south and east.
- JAXA has balloon experiment facilities. Interstellar Technologies, small rocket developing company, has its head office.



East and South sides of Taiki Town is open sea.

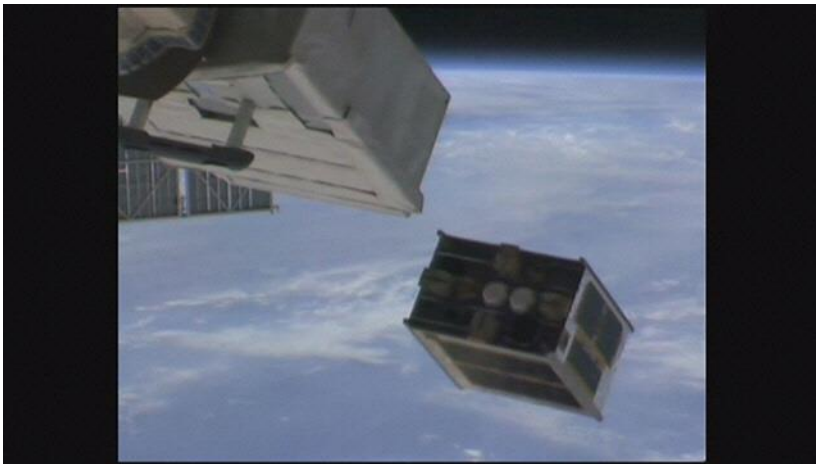


Taiki-cho(Town) multi-purpose Koku-koen (Aviation park)

6. Approach to space industry in Hokkaido

(3) Development of Satellite

- Professor Takahashi of University of Hokkaido jointly developed the small satellite "DIWATA 1" with the Philippine government etc.
- University of Hokkaido has the "Space Mission Center", and many researchers have conducted space related researches across the university faculties.



Ejection of DIWATA1 from ISS
(HP of University of Hokkaido)

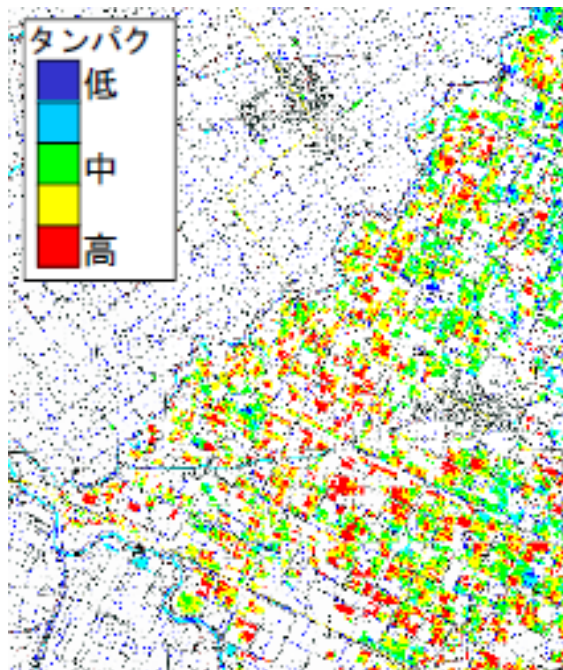


RISING2
(HP of University of Hokkaido)

6. Approach to space industry in Hokkaido

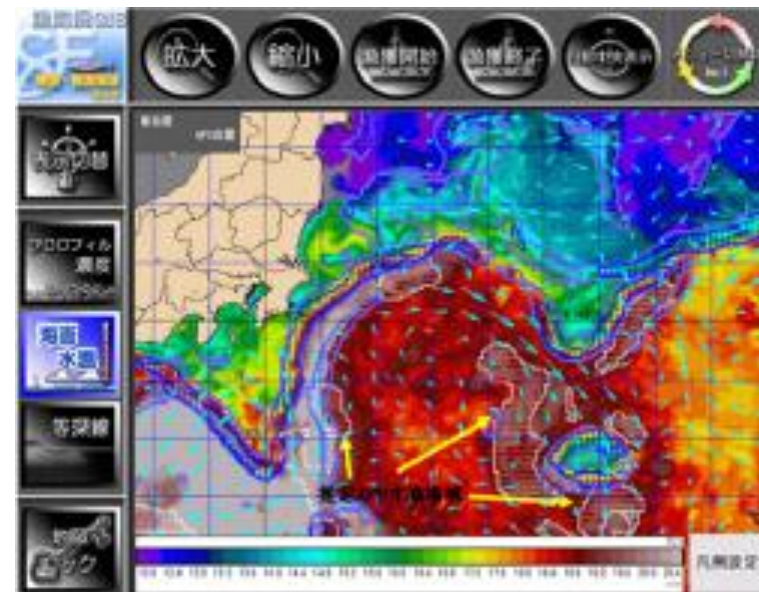
(4) Utilization of remote sensing data

- In the agricultural field, it is used for wheat growth control, rice protein analysis, etc.
- Professor Saito of University of Hokkaido is conducting research to use for fishing ground prediction.



Rice protein map

(Hokkaido Research Organization, Central Agricultural Experiment Station)



Fishing ground prediction Map

(HP University of Hokkaido)

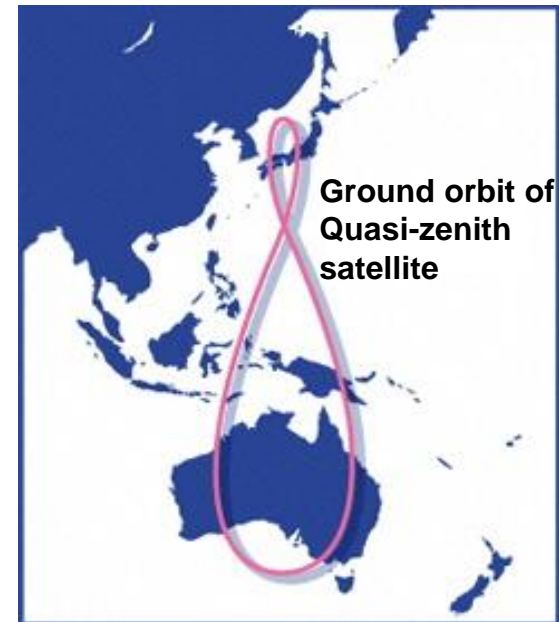
6. Approach to space industry in Hokkaido

(5) Utilization of positioning data

- Professor Noguchi of University of Hokkaido develops an automatic traveling system for tractors
- In the future, quasi-zenith satellites will be used to realize a more accurate system. It will be expanded to overseas and other overseas markets.



Cooperative operation of an unmanned tractor (HP University of Hokkaido)



Quasi-zenith satellites are expected to be effective in Asia

Thank you for your attention.



その先の、道へ。北海道
Hokkaido. Expanding Horizons.

2018年は北海道命名150年
In 2018, Hokkaido stands for 150 years after being named.