

AgriTech in Japan

Stepping through the doors of a world leader

Background

Japan embraces AgriTech solutions to face deep socio-economical challenges, above all an ageing population that will lead to a labor shortage of **200,000 farmers by 2040**.

With a densely populated country with highly fragmented parcels, **80% of the Japanese agri sector is made of SMEs**.

The total size of the domestic AgriTech market was **10.42 billion JPY in FY2016**, a **7.2% increase** over the previous year.

Cultivation and production control solutions have been popular, but sales and operational support, as well as precision farming are also forecast to grow significantly in the coming years.



KEY FEATURES

- An aging industry (average age of Japanese farmers: **66.5 yo**) with a dropping number of farmers. Less than 26% of population engaged in agriculture is under 50.
- A sector where manual work is still overwhelming due to geography and types of crops.
- A production leaning heavily toward rice and vegetables (almost half of total agricultural production in 2013 based on value).
- A densely populated country with highly fragmented, yet very fertile parcels: 50% of the population lives in one of three metro areas.
- Farmers working up to 2 hectares of land represent 80% of all producers.
- High production costs.
- Increasing exports are hindered by low-level adoption of organic farming, low level of international process management certification (GAP, HACCP), and chemical MRLs requirements.

MARKET PRIORITIES

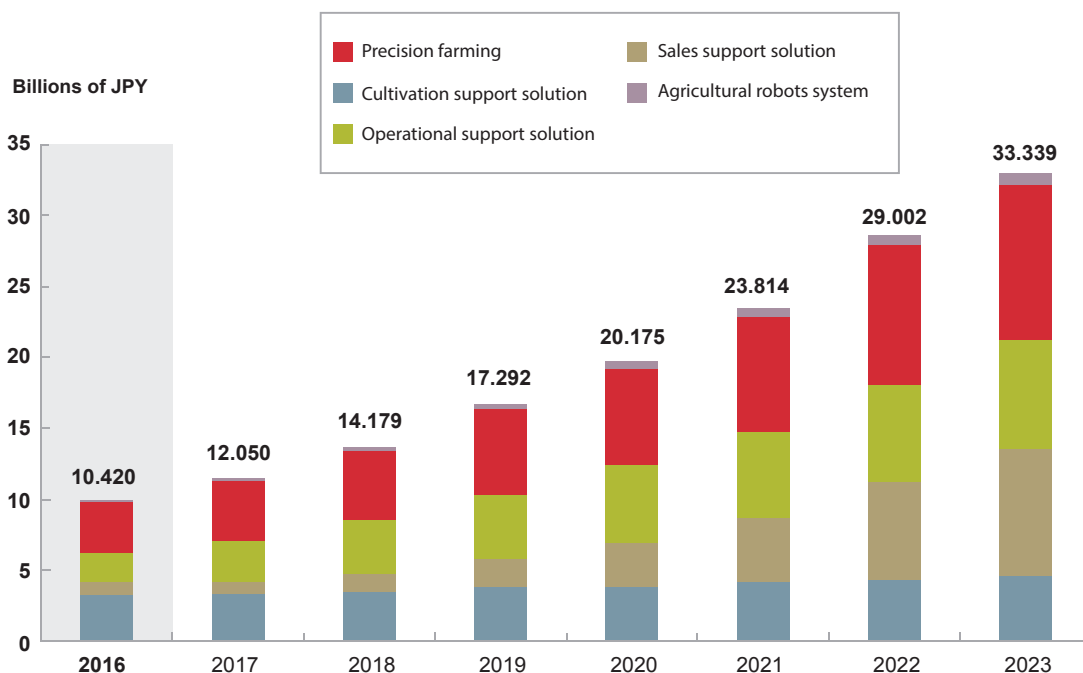
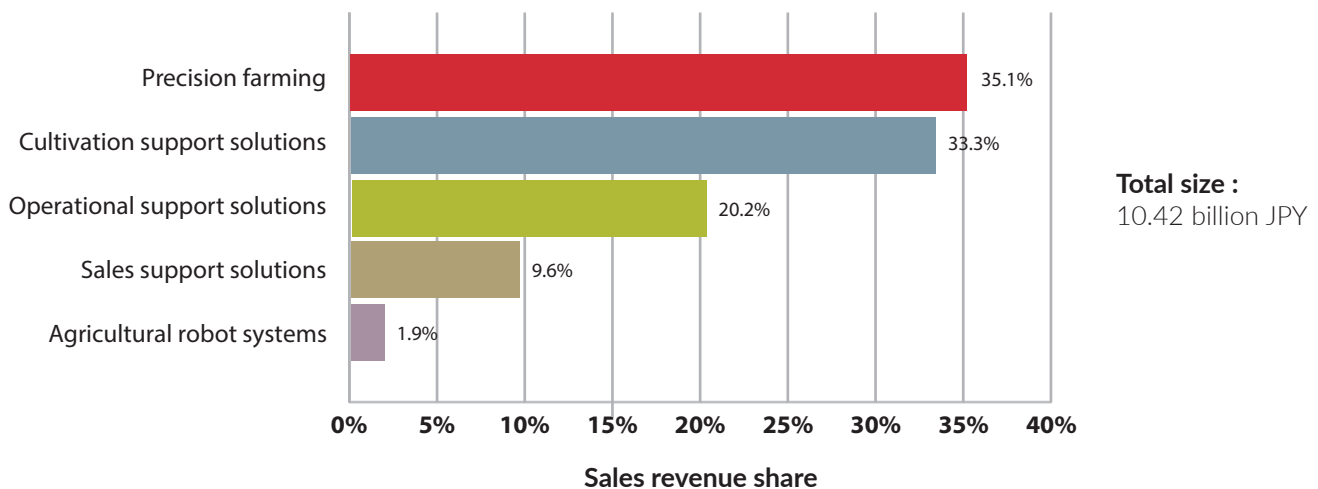
- Conversion of agricultural know-how into data to allow inexperienced workers to perform high-precision work.
- Use of cloud systems to improve consumer satisfaction and trust by providing food traceability, live updates, and production information.
- Use of Big Data, drone, GPS and sensor technologies to maximize crop yield and quality
- Increasing large-scale production and overcoming workforce shortage.
- Improve the work capacity of machinery to allow for night operations, automatic operation, multiple operations.
- Robot technology to alleviate physical limitations of aging workers.

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Market Size and Growth Potential

- Total size of the domestic AgriTech market: **10.42 billion JPY** in FY2016, a **7.2% increase** over the previous year.
- Growth potential: **33.339 billion JPY** by **FY 2023**.
- In more specific sub-sectors, the market of ICT services in the agriculture sector is projected to reach **7.32 billion JPY by 2020**, a 4.5 times growth compared to 2015.
- Cloud services make up the largest IT segment, with a share of 48%. They **grew by a factor of 7.5** between 2015 and 2016.
- Until FY2017 the market was primarily centered on cultivation support solutions such as production control of farm products.
- After FY2018, sales and operational support solutions **are forecast to increase**.
- Precision farming is expected to grow from FY 2018, due to the expansion of unmanned operation systems. Increase from **29.9% to 35.1% market share** between FY 2015 and 2016.

Sales revenue distributon of the domestic smart agricultural market FY 2016, by solution



Actors & Investors

Heavy actors of Japan tech, engineering, machinery and robotics industries are increasingly active in AgriTech R&D.

Open innovation and acquisition of majority shares in AgriTech companies allow those giants to position themselves in the global agribusiness market. Large general trading companies like **Sumitomo** or **Mitsui** look at AgriTech to diversify their investment.

They invest in domestic and foreign companies alike. Regional banks support local community and projects.

Communication giant **Softbank**, e-commerce leader **Rakuten** get into AgriTech.

Rakuten

Rakuten invested into Telefarm, a platform promoting organic farmers in Japan, helping them with storage, transportation, manufacturing and hiring of workers. <https://global.rakuten.com/corp/about/>

SoftBank

Softbank launched the sales of an agricultural drone in February 2018. Equipped with eight propellers, it can carry liquid agricultural chemicals, fertilizers and herbicides up to 10 kg and can be sprayed in a maximum of 1 ha of farmland in 10 minutes. <https://www.softbank.jp/en/>

OPTiM®

Optim Inc. is a market leader in AI, IoT and Big Data platform, whose major shareholders are FUJI XEROX Co. Ltd. and NTT Eastern Japan. They launched in December 2017 a "Smart Agriculture Alliance" to create an ecosystem between actors (startups, investors, local governments, universities) in the AgriTech field. <https://en.optim.co.jp/>



A vertical farming group from the US, got a record-breaking USD 200 million investment from Japan's SoftBank in 2017 (<https://bit.ly/2q5GrJG>). Largest ever farm tech funding round with SoftBank. <https://www.plenty.ag/sf/>

Sumitomo

Sumitomo invested in Farmnote, a Japanese startup manufacturing wearable technology to collect data from cattle, has raised JPY 500 million (USD 4.6 million) in funding in 2017. <http://www.sumitomocorp.co.jp/english/>

Nileworks

A Japanese company focused on the development of hyper-precise agricultural spray drones raised JPY 800 million (approximately USD 7 million). <https://www.nileworks.co.jp/>

FarmersEdge™

The Canadian-based precision agriculture provider recently announced a new partnership with Japanese general trading company Mitsui & Co, Ltd. to focus on developing big data technologies. <https://www.farmersedge.ca/>

Opportunities for Swiss Companies

Market Needs



IT & Cloud

- Cloud and ICT solutions to grasp, update, share and manage forest information (resources, terrain, borders, ownerships).
- Production management solutions for forestry industry (including evaluation of quantities and qualities of wood in stockyards and adjusting shipment to match demand).
- Shift to paperless operations: digitization of farming operations to improve efficiency and allow for exports.
- Accumulating data and creating databases to apply Big Data analysis tech.



Mapping & Sensors

- Use of energy harvesting tech to provide wireless power to crop sensors.
- Drone technology (ex: precision fertilizer spraying).
- Sensors and camera.
- Drone-based solutions to evaluate landslide risks.
- Solutions to measure forest resources (aerial measurement).



Robotics & Machinery

- Smart lighting systems for hydroponics plants.
- Smart agricultural machinery, example: self-driven tractors relying on GPS and sensors.
- Automation and robotization of farms and plant factory to cut down operating costs.
- High-performance forestry machines, including tower-yarder to yard heavy wood in complicated terrains.
- Development of unmanned forwarder and harvester with automatic classification of wood quality.

Want to Know More?

Contact us!

While this paper is intended to provide an overview of this specific market and its opportunities at the time of its edition, each individual Swiss manufacturer and exporter should conduct their own research to get a better understanding of the possibilities and opportunities available.

Together with experienced industry specialists, the Swiss Business Hub Japan will help Swiss and Liechtenstein companies explore and develop their chances based upon customized and in-depth analysis. We can open doors to the Japanese AgriTech sector and your potential partners.

Our team will help you decide on a suitable market strategy for Japan. We will prepare a service package based on your specific requirements and business priorities.

Your Contacts :

Claudio Mazzucchelli
Yumiko Kijima

Swiss Business Hub Japan

c/o Embassy of Switzerland
5-9-12 Minami Azabu, Minato-ku
106-8589 Tokyo Japan
tok.sbhjapan@eda.admin.ch

<https://www.s-ge.com/en/company/swiss-business-hub-japan>



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