A more transparent asparagus supply chain from Peru to the U.S.

In this pilot, a 100 percent increase in supply chain visibility was achieved through the implementation of GS1 traceability standards. All stakeholders are now able to communicate with each other in the same "global business language," avoiding errors that could increase costs and potentially impact competitiveness for Peruvian companies.

Providing the green light for visibility

To examine if efficiencies in international supply chains could be improved with the use of a standardised system, a suite of cross-border pilot projects were executed with support from APEC.[1] The projects aimed to show how GS1 standards and seamless data sharing between trading partners could provide supply chain visibility of products, thereby ensuring traceability and eliminating manual processes for greater efficiencies in international supply chains and aligned with APEC targets.

From 2015 to 2016, the pilots focused on food and beverage supply chains, with a range of different applications of standards to improve supply chain integrity, visibility and product quality. To support the initiative, GS1 worked with APEC governments to test the use of GS1 standards in international supply chains between APEC member countries and in close cooperation with the private sector.

The findings of the pilot projects have shown that the use of a standardised system, designed to share product data and GS1 Global Trade Item Numbers (GTINs) encoded in barcodes to uniquely identify products, can drive significant efficiency gains in fresh asparagus trade between Peru and the United States.

Challenge

GS1 Peru worked with BETA, the leading Peruvian exporter, to improve its processes, targeting efficiency gains and visibility improvements in the supply chain.

Solution

GS1 standards were applied to asparagus products and EPCIS was used so that all trading partners in the supply chain could monitor, track and trace products in real-time.

Results

Processing time for the 3PL company was reduced by 20 percent. Efficiency gains in communication increased by 50 percent with a reduction of time and resources from 1,500 to 750 hours per year.

1 APEC is the premier Asia-Pacific economic forum. Its primary goal is to support sustainable economic growth and prosperity in the Asia-Pacific region. www.apec.org

Focusing on a key, competitive export

Peru is the world's leading asparagus exporter and the largest supplier to the U.S., mainly in the fresh green asparagus market. During the pilot, GS1 Peru worked with Complejo Agroindustrial Beta (BETA), the leading Peruvian exporter that represents 16 percent of the country's asparagus exports.

The pilot aimed to provide a better understanding of the application of GS1 standards, exploring how they could solve potential challenges, the associated costs and resulting benefits. It delivered first-hand experiences about the use of GS1 standards to APEC member countries when monitoring the movement of selected products along the supply chain.

GS1 standards were applied to selected products so that all trading partners in the entire supply chain could monitor, track and trace products in real time, from manufacturer to third-party logistics (3PL) operators and distributors.

Partners in the project included:

- Peruvian Ministry of Foreign Trade and Tourism (MINCETUR), which was the project coordinator through the APEC directorate

- BETA, the agro-industrial fresh asparagus exporter

- Frio Aéreo, the 3PL company

- Alpine Fresh, the U.S. importer

- Superintendencia Nacional de Administración Tributaria (SUNAT), the Peruvian Customs Authority

- Instituto Nacional de Calidad (INACAL), Peru's representative in ISO

- GS1 Peru

The asparagus supply chain was selected by MINCETUR since asparagus is a key, competitive Peruvian export. Furthermore, agricultural exports are the country's second largest generator of foreign exchange. Peru is considered as a world leader in asparagus production with 14 percent of the earth's planted surface, only surpassed by China with 39 percent.

In preparation, the data fields required for traceability in the supply chain were defined based on customer requirements and the GS1 global traceability framework. The initial preparatory phase targeted traceability data definitions while the second phase focused on data mapping, and the third phase on the actual implementation.

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Better decisions during cross-border clearance

By including a GS1 identifier encoded in a GS1 barcode on each package label, trading partners could now more easily identify the asparagus (and information about it) in each package.

GS1 product identification greatly improved and reduced processing time for the 3PL company, to include a 20 percent reduction of time when receiving trucks and pallets. In addition, assembly times of unit load devices (ULDs) for air dispatch was cut in half—from 6 to 3 minutes per pallet.

Customs representatives obtained more detailed, real-time information about shipments of asparagus, enabling them to make better, more informed decisions during cross-border clearance for improved risk management.

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Before GS1 standards, email, phone and fax communications were used. Now, data is easily accessible among trading partners via EPCIS, a GS1 standard that enables trading partners to share information about the physical movement and status of products as they travel throughout the supply chain.

Time and resources used for searching and consolidating information from shipping processes, temperature measurement, calls for visibility purposes (now in the pilot project consolidated into one single cloud tool), improved by 50 percent, from 1,500 to 750 hours per year and a 10 percent decrease in manual processing costs.

Cold chain monitoring in fresh foods

In the fresh produce supply chain, the measurement of temperature is a critical factor for effective risk management, making this factor highly relevant during the pilot project. By using cold chain management with temperature monitoring throughout the supply chain, temperatures were maintained between 2 to 5 degrees Celsius. The condition of the perishable asparagus could be tracked, thus ensuring its quality from farm to shelf.

Time and resources used for searching and consolidating information from shipping processes, temperature measurement, calls for visibility purposes (now in the pilot project consolidated into one single cloud tool), improved by 50 percent, from 1,500 to 750 hours per year and a 10 percent decrease in manual processing costs.

One hundred percent visibility of the fresh asparagus supply chain was achieved since all stakeholders were able to access and share information pertaining to each of the processes. GS1 standards used included Global Trade Item Number® (GTIN®)-13 and GTIN-14 for product identification plus batch and packing-date information encoded in the GS1-128 barcode on each of the packages. The Serial Shipping Container Code (SSCC) encoded in the GS1-128 barcode was used to identify pallets of asparagus packages. In addition, EPC-enabl ed RFID scanners were positioned to read the labels.

Findings of the pilot demonstrated how supply chain stakeholders could realise tangible benefits such as significant efficiency gains and cost savings—enabled by increased supply chain visibility.

Key success factors included the participation and commitment by all stakeholders, including government authorities. In future pilots, government authorities associated with the importing country will be targeted. Timing was another key factor: An ideal timeframe for implementing a fresh foods pilot is the low season for maximum involvement and attention of the participating companies.

Ongoing interest and excitement

The pilot results are of significant interest for both the private and the public sectors. In fact, the MINCETUR and SUNAT are planning to launch an initiative to implement a larger scale GS1 solution on their governmental platform so that the private sector and other governmental agencies like SENASA, Peru's National Food Safety and Quality Service, as well as MINAGRI, the Agro-industrial Ministry will align their own processes with GS1 standards in mid-term.

There is also political interest to build, with support from GS1 Peru, a single Integrated Risk Management System based on global data standards and the visibility they provide. The vision is that this system will be implemented and integrated gradually. In the initial phase, the Peruvian government will use GDS separately as part of an online report or analysis tool to improve its risk management processes with plans to integrate into its own systems with a visibility tool at a later date.

GS1 Peru has obtained the commitment of the Peruvian APEC Directorate, MINCETUR, SUNAT and SENASA authorities to continue working on the development and implementation of GS1 standards. They recognise that this pilot is the first step of many other efforts to continue exploring the benefits in other supply chains such as quinoa, paprika, white onions, grapes, as well as other more complex transport and distribution modes such as sea.

GS1 Peru will continue working closely with government stakeholders and include other relevant entities for export processes, including exporters associations, to promote the results of this first pilot and its benefits for Peruvian companies and the country's competitiveness.

Learn more

To learn more about this pilot, contact Mary Wong, GS1 Peru, at mwong@gs1pe.org.pe.

About GS1

GS1 is a neutral, not-for-profit, global organisation that develops and maintains the most widely used supply chain standards system in the world. GS1 standards improve the efficiency, safety, and visibility of supply chains across multiple sectors. With local Member Organisations in over 110 countries, GS1 engages with communities of trading partners, industry organisations, governments, and technology providers to understand and respond to their business needs through the adoption and implementation of global standards. GS1 is driven by over a million user companies, which execute more than six billion transactions daily in 150 countries using GS1 standards. More information at www.gs1.org.

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