

Digitalization of Polish Food Passporting

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Importance of Digitalizing Meat Value Chains

- Digitalization enables better recording and tracking of meat production, distribution and handling data, facilitating smoother trade processes.
- It allows the meat value chain to be more transparent, efficient, and compliant with international trade standards, thus supporting global meat trade.

Introduction to the Digitalization of Polish Food Passporting in the Context of Meat Trade

- Polish food passporting is an advanced digitalization project aimed at providing full traceability of food products in value chains, from the field to the consumer.
- In the context of global digitalization trends, this initiative addresses growing demands for transparency, quality, and safety in the meat trade, making it a relevant topic in the digitalization of value chains.

Origin and Development of the Polish Food Passporting Project

- Launched in 2020, the food passporting initiative aligns with global trends in value chain transparency.
- Led by the National Support Centre for Agriculture (KOWR) and GovTech Poland, the project aims to modernize and digitize the processes associated with food and meat trade.
- Involved beef and pork livestock producers (farmers), slaughterhouses and meat processors to test solutions in every stage of value chain

Digital Tools Used in Food Passporting

- The Polish food passporting system utilizes technologies such as blockchain, the Internet of Things (IoT), and big data analysis to monitor and verify the origin and path of production and distribution, quality, and safety of meat products in every stage of value chain
 - Blockchain ensures data integrity,
 - IoT tracks environmental conditions, and
 - Big data improves analysis accuracy.

Pilot Implementation of Meat Passporting

Between 2021 and 2023, a pilot phase focused on beef and pork markets demonstrated the effectiveness of food passporting in tracking meat throughout the value chain.

This pilot showed that digital tracking increases consumer trust and supports the international meat trade by providing verifiable product data.

Examples of Digital Meat Passports' Contents

- Digital passports include detailed information about meat products, such as the origin and their full path, breeding conditions, transportation, and processing stages.
- These data points are critical for enhancing transparency and building trust with consumers and trade partners.

Benefits of Digitalization for Meat Trade

- Digitalization of meat value chains offers numerous advantages, including reducing trade barriers, simplifying compliance with international regulations, and enhancing product value by providing transparent, verifiable information about the origin and quality of meat and its processing.

Challenges in Digitalizing Meat Value Chains

- Despite the benefits, several challenges remain, such as technological, financial, and regulatory hurdles.
- These include the need for further IT infrastructure development, standardization of processes, and fostering international cooperation to overcome these barriers.



Standards and Regulations Supporting Digital Meat Traceability

Global standards like GS1 and ISO play a crucial role in supporting digital meat traceability.

These standards ensure the consistency and interoperability of digital systems, facilitating international meat trade and increasing transparency across value chains.

**Challenges in
Meat Value
Chain
Traceability**

Traceability

Identification

Authenticity

Traceability Challenges in Meat Value Chains

- **Complexity of Global Supply Chains:** Meat supply chains often span multiple countries and involve various intermediaries, including farmers, processors, distributors, and retailers. This complexity can make it difficult to ensure consistent traceability across all stages of production and distribution.
- **Data Fragmentation:** Different stakeholders may use diverse systems and standards for data recording, leading to fragmented information that is hard to consolidate. This fragmentation hinders the ability to track products accurately from the source to the consumer.
- **Lack of Real-time Tracking:** Traditional traceability systems often rely on periodic updates rather than real-time data, making it challenging to respond quickly to issues such as contamination or recalls. Real-time tracking remains a significant challenge due to technological and infrastructural limitations.

Identification Challenges in Meat Value Chains

- **Inconsistent Identification Practices:** The methods used to identify and label meat products can vary significantly across regions and companies. Inconsistent identification practices can lead to mislabeling and difficulties in tracking the true origin of products.
- **Manual Processes and Human Error:** Many identification steps in the supply chain, such as labeling and record-keeping, are still done manually. This increases the risk of human error, leading to incorrect or incomplete data being entered into traceability systems.
- **Cross-border Regulatory Differences:** Regulations for meat product identification differ widely between countries, complicating international trade and making it challenging to maintain consistent identification standards across borders.

Authenticity Challenges in Meat Value Chains

- **Fraud and Counterfeiting:** The meat industry is vulnerable to fraud, such as the substitution of high-quality meat with lower-grade products. Ensuring authenticity is challenging, particularly in complex supply chains where opportunities for tampering increase.
- **Verification of Claims:** Claims regarding the origin, organic status, or specific attributes of meat products can be difficult to verify. Ensuring that these claims are accurate and authentic requires robust verification processes, which are not always in place.
- **Technology Adoption Barriers:** Advanced technologies like blockchain, DNA test can help verify the authenticity of products, but widespread adoption is hindered by high costs, lack of expertise, and resistance to change within the industry.

The Role of Digitalization in Simplifying Reporting Processes

- Digitalization significantly simplifies compliance reporting by automating data collection and processing.
- This reduces the administrative burden and costs associated with manual reporting, particularly in international meat trade, where compliance is crucial.



Impact on Compliance with EUDR and CSRD

Food passporting supports compliance with EU regulations such as the European Deforestation Regulation (EUDR) and the Corporate Sustainability Reporting Directive (CSRD).

Digital tracking systems make it easier to monitor meat value chains' environmental impact and align with sustainability goals.

The Future of Digitalization in Meat Trade

The future of meat value chain digitalization lies in further advancements in technologies like blockchain and artificial intelligence.

These innovations will increase efficiency and transparency, making global meat trade more streamlined and aligned with sustainability and regulatory goals.

Summary and Final Conclusions

Polish food passporting demonstrates the example how the use of digitalization in the meat sector, enhancing transparency, regulatory compliance, and international trade.

The continued development and integration of digital tracking systems will be key to the future of the polish beef in global meat trade.