



FROM FRESH TO SUSTAINABLE

Tackling food waste with the
QR Code powered by GS1

Every European citizen wastes 131 kg of food annually, much of which is fresh produce such as vegetables, fruit, bread, meat, and dairy. This has significant ecological, economic, and social consequences. Unclear information about shelf life and storage conditions often leads to unnecessary food loss. Although consumers contribute the most, there are also great opportunities for retailers and processors. The EU aims to reduce food waste by 50% by 2030 (United Nations Sustainable Development Goal 12.3). In this paper, we show how the QR Code powered by GS1 can help reduce waste, comply with regulations, promote reuse, and contribute to a more sustainable food system.

THE POWER OF THE QR CODE POWERED BY GS1

The QR Code powered by GS1 offers a powerful solution to reduce food waste, extend the shelf life of fresh products, and give a second life to products that would otherwise be discarded. Thanks to the GS1 Digital Link – which provides access to an unlimited number of information sources via a single link – consumers, retailers, suppliers, and other chain partners can quickly access relevant information that helps prevent waste.

Raising consumer awareness: The QR code on packaging provides consumers not only with the best before date, but also crucial information about the origin, quality, and freshness of products. This ensures that they can make more informed choices, such as buying products with a shorter



“Unambiguous data and solutions, such as the QR Code powered by GS1, enable companies to identify and target waste within the chain, while helping consumers become more food conscious. The process starts with insight to achieve your environmental, social and financial goals.”

Toine Timmermans, CEO Food Waste Free United Foundation



shelf life at a lower price. Is a product past its best before date? The QR code offers smart tips for reuse, such as donating it for circular applications like animal feed. This gives wasted products a second life or ensures they are recycled responsibly.

Efficient inventory management: With standardized product information, retailers and other supply chain partners can manage their inventories more efficiently and effectively, better matching supply and demand. This prevents overproduction and waste. With an end-to-end planning system, products can be made available at the right time, while techniques such as dynamic pricing and intelligent markdown make products more attractive when they need to be sold quickly. This further reduces waste. According to the World Economic Forum, efficient inventory management, such as automated planning systems, can lead to up to **20% less food** waste in retail, reducing both waste and operational costs.

Source: World Economic Forum - The Future of Food

Sustainability gains: Reducing food waste not only results in cost savings but also significantly reduces energy and resource consumption, contributing to a more sustainable food system and environment. Reducing food waste ranks in the top 3 solutions to combat climate change.

Complying with European legislation: The QR Code powered by GS1 helps companies comply with upcoming EU legislation, such as the 'farm to fork' strategy. By sharing standardized, reliable product information via GS1 Digital Link, companies can easily provide shelf life data and origin information. This improves traceability and reduces waste.



HOW THE QR CODE WORKS

The **QR Code powered by GS1** enables standardized access to extensive product information, such as best before dates, origin, and recycling tips through the **GS1 Digital Link**. It can be easily read with a smartphone or scanner, providing direct access to information that can help prevent waste.



GS1 STANDARDS THAT FORM THE BASIS



QR Code powered by GS1: This symbol provides access to an unlimited number of information sources and detailed product information, such as best before dates, origin, and recycling tips. This is possible with the GS1 Digital Link standard.



GS1 Digital Link: This standard allows for linking many different information sources, depending on the user. These can be both businesses or consumers (B2B or B2C).



GTIN (Global Trade Item Number): With the GTIN, you can uniquely identify trade items worldwide. By linking the GTIN with organizations and locations (GLNs), it is possible to trace products throughout the chain.



GLN (Global Location Number): With a GLN, you can uniquely identify organizations and locations worldwide. The GLN provides insight into the production chain.



GS1 Data Source/GDSN (Global Data Synchronization Network): The single source of truth data pool for reliable product information that you can share with all partners in the chain.

WHAT COMPANIES SAY



“By working with GS1, we can explore the benefits of the QR Code for our customers and our business. We know that consumers want direct access to detailed product information via their smartphones. Additionally, we are always looking for solutions to reduce waste and move products more efficiently through our chain. The QR Code powered by GS1 will help us tackle these challenges, and we are already taking steps to prepare for the transition.”

Matthew Rhind, Supply Chain & Development Director, Tesco



CASE STUDY



Parla Deli, a deli in Brazil, has achieved full traceability and efficient management of best-before dates thanks to the QR code powered by GS1 with a GS1 Digital Link on all products. With this, they have reduced food waste by 50%.

LEADING COMPANIES IN THE RETAIL AND CONSUMER GOODS INDUSTRIES SUPPORT THE TRANSITION TO QR CODES WITH GS1 STANDARDS

Globally, a transition is taking place from the traditional barcode to the new generation barcode: the QR Code powered by GS1. In [the Global Industry endorsement statement](#) you can read more about the statement and companies that have given their commitment.



ABOUT GS1

GS1 in Europe is a non-profit organisation uniting 49 member countries and representing over 500,000 companies across Europe. As part of the global GS1 network, we provide a system of internationally recognised standards that enable seamless identification of products, locations, entities, and assets. Our mission is to create a common language for business, fostering efficiency, transparency, and innovation across industries. Together, we drive collaboration and support businesses in Europe.



Do you need help?

GS1 in Europe Member Organisations can support you further in implementing GS1 standards.

Connect with your local GS1 Member Organisation through <https://gs1.eu/gs1-in-europe-member-organisations>

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