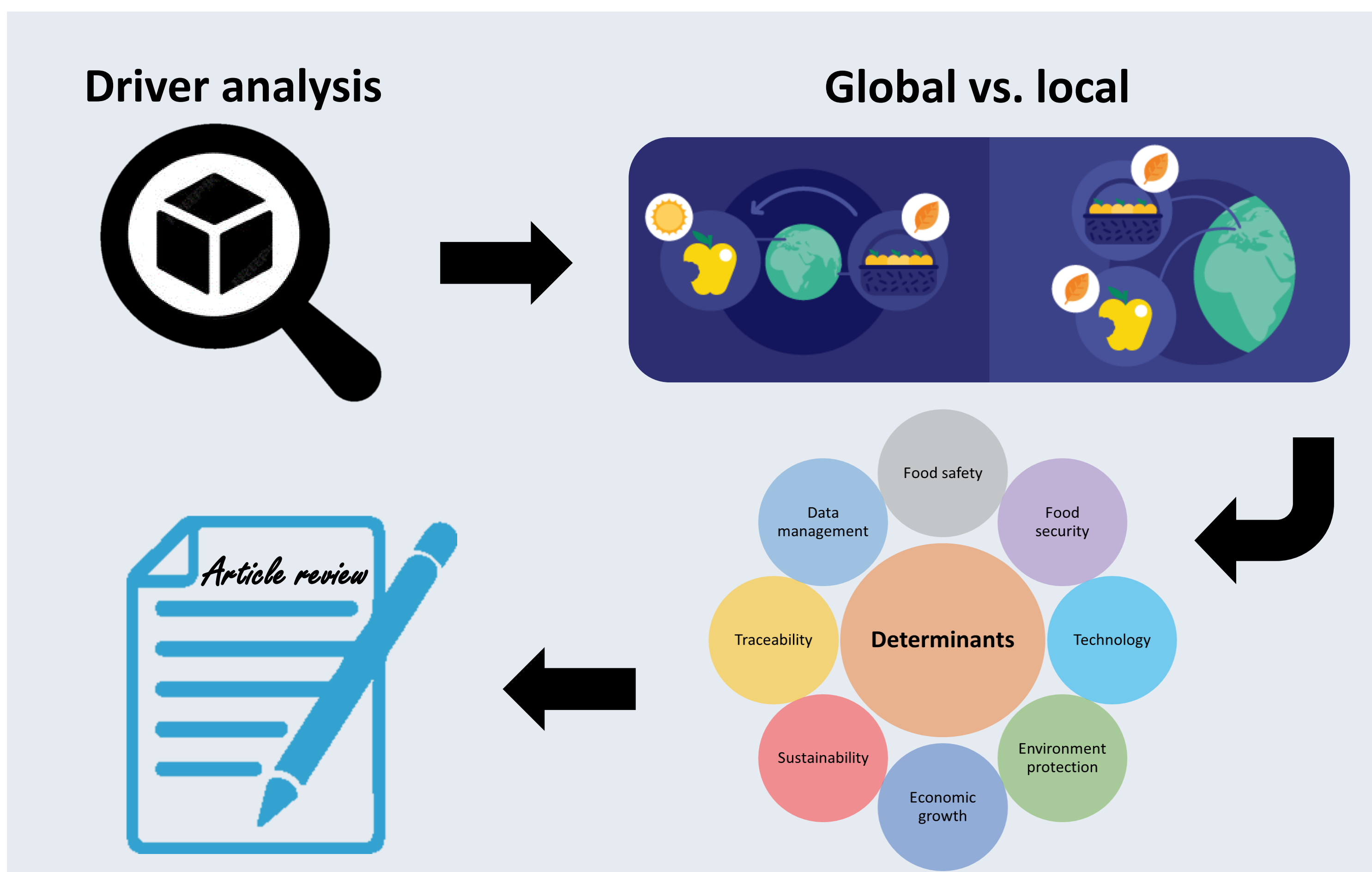


Differences between local and global food supply chains

Mariel Stefhanie Aybar Espinoza¹, Annemarie Käsbohrer^{1,2}, Martin Wagner³, Mieke Uyttendaele⁴, Marion Gottschald¹

¹ German Federal Institute for Risk Assessment, Berlin; ² University of Veterinary Medicine, Vienna; ³ Austrian Competence Centre for Feed and Food Quality, Safety and Innovation, Tulln; ⁴ Ghent University, Ghent



Aim

Identification of distinctions between local (LFC) and global food supply chains (GFC).

Methods

A scientific and grey literature review was conducted within the FoodSafeR project. The analysis was executed using a drivers' approach focused on eight determinants. Performance of each determinant was qualitatively assessed and rated based on comprehensive information found in the literature.

Results

Food safety

- GFC implement food safety management systems to comply with Codex Alimentarius Commission.
- LFC products are favoured, albeit posing more food-related risks.

Food security

- GFC contribute to food availability in shortages of food supplies.
- LFC ensure food access to populations located away from cities.

Environmental protection

- LFC benefit from proximity with consumers (↓energy use), while GFC have optimised food supply distribution routes.

Economic growth

- GFC contributed to 8% of global gross domestic product in 2020.
- LFC stimulate local economies limited to small-scale.

Technology

- GFC use big data analysis, 5G and AI; yet face data privacy issues.
- Complex software, hardware and shortage of AI-skilled workforce are restraining factors for LFC.

Sustainability

- Superiority of LFC over GFC cannot be stated; instead, a case-by-case assessment at consumer, policy and firm level is advised.

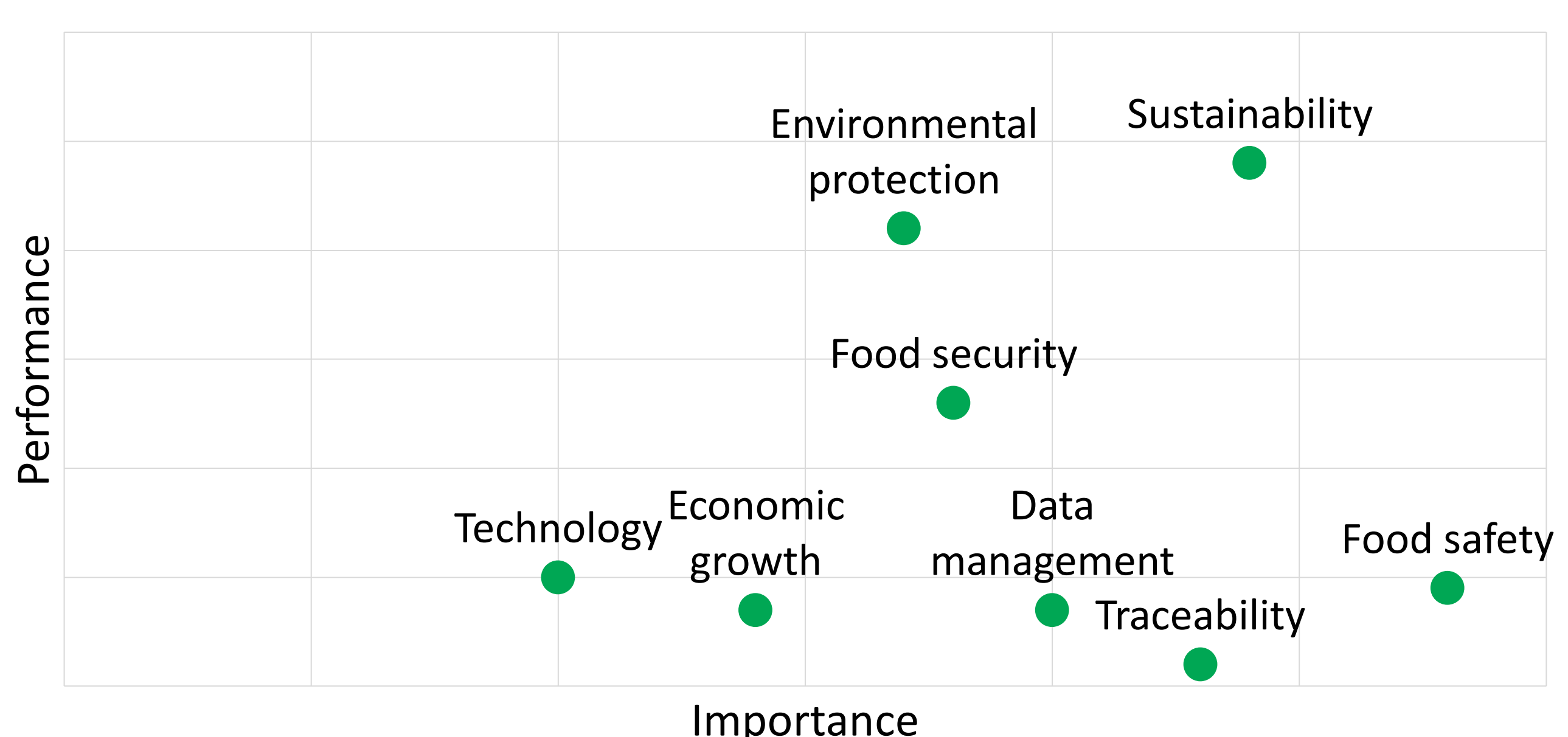
Traceability

- Digital traceability methods enhance transparency, traceability and response in foodborne incidents.
- Higher adoption in GFC than in LFC due to higher capacity of GFC.

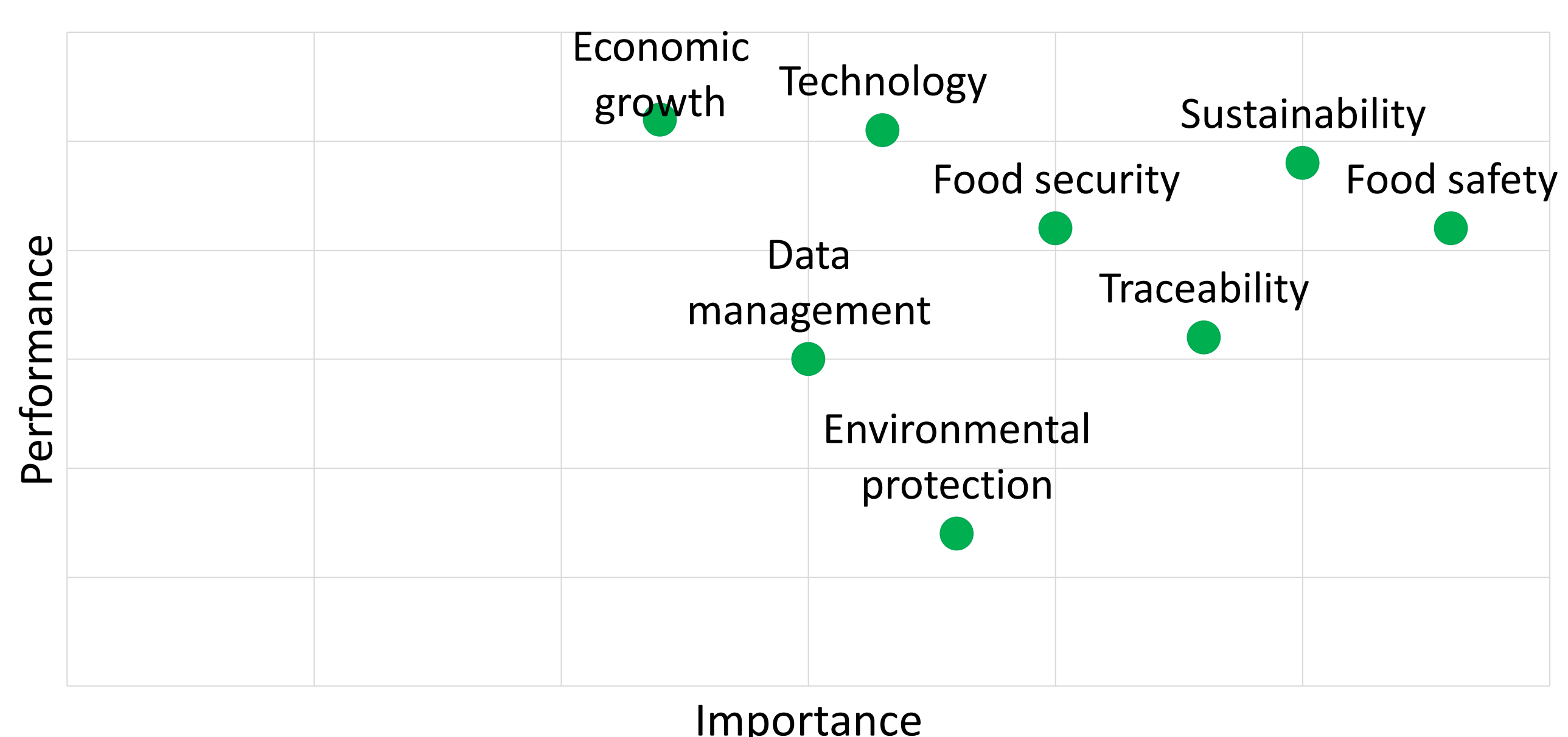
Data management

- Data standardisation and efficient data architecture are crucial for GFC, whereas LFC use spreadsheets, local inventory software.

Performance of LFC



Performance of GFC



Conclusions

- LFC encounter greater challenges than GFC regarding food safety, traceability and data management due to limited capacity.
- Further research is needed for optimization of LFC processes e.g. via harmonised data structures or tailor-made software.