

FOOD INTEGRITY CULTURE ASSESSMENT TO PREVENT FRAUD IN FOOD INDUSTRY

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- The fight to prevent food fraud requires an approach that goes beyond the common food safety-based strategies and falls into the sphere of food integrity.
- The concept of food integrity comprises in its notion all the aspects of food processing, handling and monitoring occurring along the food supply chain.
- Food integrity considers not only technical and managerial factors but also the human dimension involved in the actual execution of processes.

OUR DEFINITIONS

- **Food integrity** is a multidimensional concept concerning the integrity of product, process, people and data, referring to the controlled status of a food product to be intact, safe, of quality and authentic in its claims, as well as sourced, processed and distributed ethically throughout a food supply chain (Figure 1).
- **Food integrity climate** refers to the employees' shared perception of leadership, communication, commitment, risk awareness and resources regarding food integrity within the company's working environment in terms of product, process, people and data integrity.
- **Food integrity culture** is the result of the interplay of the food integrity climate perceived by the employees of a food company (human dimension), the food integrity performance of operators in terms of product, process, people and data integrity (operational dimension), and the context in which the company is operating with technical and managerial control measures to prevent potential food fraud vulnerabilities (techno-managerial dimension).

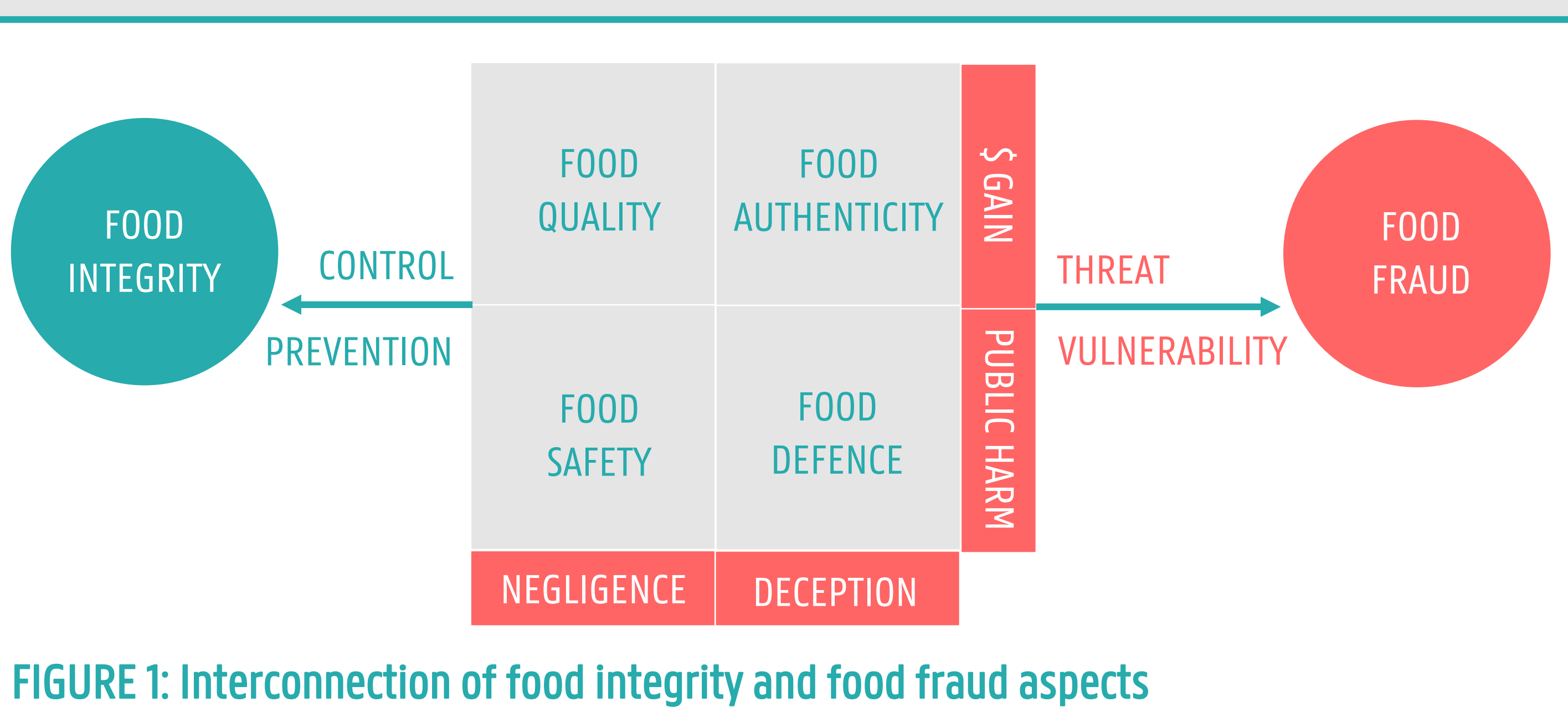


FIGURE 1: Interconnection of food integrity and food fraud aspects

FOOD INTEGRITY CLIMATE ASSESSMENT TOOL DEVELOPMENT AND VALIDATION

A food integrity climate (FIC) self-assessment tool was developed to capture the subjective perceptions of operators and managers in food businesses. The FIC tool was designed in the form of a questionnaire with twenty statements and a five-point Likert answer scale (agree / disagree). The four food integrity elements (↓) were combined with five organizational climate components (→) to obtain the twenty indicators (Table 1).

FIC TOOL	LEADERSHIP	COMMUNICATION	COMMITMENT	RISK AWARENESS	RESOURCES
PRODUCT	Q1	Q2	Q3	Q4	Q5
PROCESS	Q6	Q7	Q8	Q9	Q10
PEOPLE	Q11	Q12	Q13	Q14	Q15
DATA	Q16	Q17	Q18	Q19	Q20

Table 1: Matrix of the twenty FIC tool indicators

The FIC tool was expert-validated and tested in practice in a Belgian large-scale meat distribution company. By measuring employees' perceptions, it exposes the main weaknesses of a company's food integrity climate.

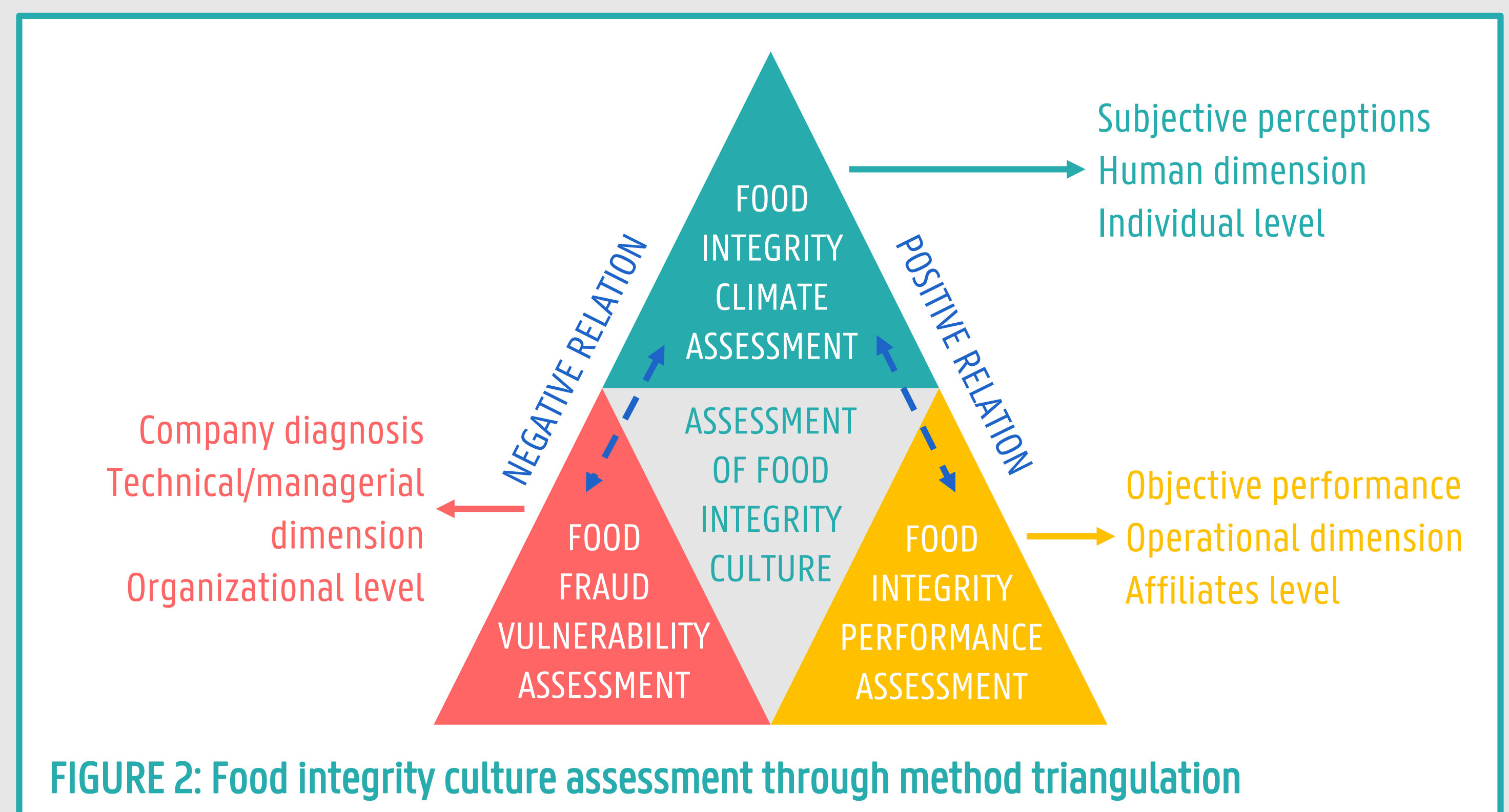


FIGURE 2: Food integrity culture assessment through method triangulation

METHOD TRIANGULATION TO ASSESS FOOD INTEGRITY CULTURE

The FIC tool was applied in triangulation with two complementary tools to assess the prevailing food integrity culture of the participating company:

1. The FIC tool acknowledges a company's food integrity climate through employees' subjective perceptions.
2. A key performance indicators (KPIs) interview verifies objectively FIC tool results and food integrity performance during an on-site observation.
3. A food fraud vulnerability assessment tool (SSAFE) complements these results through the evaluation of the company's opportunities and motivations to commit fraud in opposition to the control measures in place to counteract it (Figure 2).

RESULTS AND DISCUSSION → CONCLUSIONS

Results illustrated that the participating company has a consolidated food integrity culture. The high food integrity climate perceived by the employees and demonstrated by the good food integrity performance contribute to reduce the few opportunities and motivations to commit fraud detected in the company, in conjunction with the control measures that could be further improved. Results confirmed the hypothesis that in a company with good food integrity climate and performance, an overall low vulnerability to food fraud is found, but other situations may be revealed in other companies.

→ To achieve a strong food integrity culture, food companies should include within their standard FSMS regular assessments of their food integrity climate, performance and fraud vulnerabilities, and managing such human, operational, technical and managerial aspects as strategies of an integrated system.

REFERENCES

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