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# DIGITALIZATION OF THE FOOD CONTROL SYSTEM TO MEASURE FOOD SAFETY IN GEORGIA



## HIGHLIGHTS

- Effective data collection during public food control activities is essential to ensure food safety and compliance with regulation.
- Georgia has recently switched from a non-digital environment, which was inefficient and prone to mistakes, to a digital system to modernize data acquisition and analysis in food control.
- Digital systems allow real-time assessment of the current food safety compliance levels, permit establishing baselines and trend analyses, and enable targeted actions as a response to the food control results.
- The system contributes in risk-based planning of food control activities in Georgia. The software program scores the Food Business Operators (FBOs) based on data, including food type, activity, and history of compliance.
- Building a digital system that contains all the food safety information and procedures is a complex and time-taking task. Step by step integration allows to test and improve the system more effectively.



**Contributing Organization**  
National Food Agency of Georgia



**Geographical coverage**  
Georgia



**Main food safety issue**  
Improving the effectiveness of food control



## INTRODUCTION

Effective data collection during food control procedures by the public authorities is essential to ensure food safety and compliance with regulations. Using modern technology plays a vital role in acquiring information from food businesses, food control inspections and other food control actions. Digital systems allow real-time assessment of the current food safety compliance levels, permit establishing baselines and trend analyses, and enable targeted actions as a response to the food control results. A well-functioning digital system can provide results from several food safety aspects, pointing out where there is room for improvement giving the food control authority tools to strive for better effectiveness of food control and food safety.

Georgia, a country that earlier applied mainly a non-digital environment to collect and analyse food control data, has developed a digital system to modernize data acquisition during the recent years. Until 2017 the National Food Agency received food control results from the regions on spreadsheets and text files. The collection of



the data from the files was ineffective, cumbersome, and prone to mistakes. Authorities experienced problems in receiving timely data throughout the food chain including information of registrations of food businesses, inspection results and any other relevant food safety data. This impaired the understanding of the food safety situation in Georgia and development of food control.

The new system, which has been in use since 2017 in the capital and since then expanded to the whole country. It contains up-to-date food safety data on food businesses and compliance. Georgia is further developing the digital system to include more information from the food chain, which will permit comprehensive analyses of the food safety state and food control effectiveness.



## OBJECTIVE

The objective of the project in Georgia was to develop a digital system that would entail all food control data in one space. Such system was needed to maintain real-time information on food business operators (FBOs) and their compliance with the national level requirements, food control enforcement and other control data relevant for assessing food safety and effectiveness of food control.



## METHODOLOGICAL APPROACH

Georgia decided in 2015 to develop a digital system because of experienced obstacles in registering FBOs, shortcomings in handling food control data and lack of an overall view of the food safety situation in the country. This was the starting point of the project that resulted in a digital system that was successfully taken into use in 2017 in Tbilisi and in two years' time in the whole country. The digital system was created by the National Food Agency and was based on a commercially available programming language.

Successful food control requires that the authorities are aware of all active FBOs in the country. Therefore, the first task in the project was to identify active FBOs from different authority registers to include them in National Food Agency new online database. Other authorities including the Revenue Service and National Agency of Public Registry took part in identifying FBOs and in providing data on their activities to receive a comprehensive picture of the FBOs in the country.

Because the aim was to effectively collect information on food control inspections and compliance in food establishments, the digitalization was extended to the whole inspection process. Food control inspectors were equipped with portable tablets and printers, which permitted the electronic documentation of the inspection results immediately on-site, handing over a printout to the FBO and instant data transfer to the National Food Agency's online database.





## ACTORS INVOLVED



- **National Food Agency**  
(development of the IT system and coordination)
- **National Agency of Public Registry**  
(registration of FBOs)
- **Revenue Service**  
(classification of the size of FBOs)
- **National Statistics Office**  
(classification of FBOs' activities)



## RESULTS AND IMPACT

The development of the digital system has substantially improved the data collection and analyses in Georgia. The National Food Agency has now up-to-date information on active FBOs and their compliance, which enables knowledge-based management. The electronic documentation of inspection results enables the calculation of indicators describing the food safety compliance level in versatile ways, for example ratio of noncompliance for each type of establishment and type of noncompliance, and their development over time. The data also contains information of the use of different type of penalties, which can be used in assessing the effectiveness of food control actions.



The system is also valuable in planning food control activities. The software program scores the FBOs based on the food type, type of activity, turn over (describing the size of the activities) and history of compliance. The scoring is used to generate a risk-based inspection plan for the regions. The system is also used for monitoring food control outputs at regional and inspector level. Planned activities such as number of inspections are followed, and reminders are sent to regional divisions when necessary.

The digital system has not only increased the amount of information, but also decreased the time to collect and analyse the data to a fraction of the time that was required before. Situational analyses, annual reports and ad-hoc information needs are now quickly available.



## SUCCESS FACTORS

The development of the collection of food control data into a digital system has been strongly driven by the needs to improve food control authority knowledge-based management. The implementation of the project has been promoted by following factors:

- Political commitment to improve food safety in the country outlined in the Agriculture and Rural Development Strategy of Georgia 2021–2027;
- Recognition of the benefits of using digital technologies to save time, and the usefulness of having structured data that could be further analysed; and
- Skilful food control staff who are committed to the change.



## CONSTRAINTS/LIMITATIONS

Some constraints have been recognized during the project include financing the development of the digital system. The software program used is not optimal for expanding data collection to include all food control data, therefore it needs to be upgraded. Some legislative requirements affecting control actions are not promptly integrated in the system yet.



## LESSONS LEARNED

The digital system, that was created with reasonable resources and based on a commercially available programming language, served well for the initial objectives. However, as the need for advanced data collection increased, the current software proved not to be as flexible and useful for the intended use as the authorities desired. Development of a digital system requires sufficient IT expertise not only in the initial stage but also later when the system need upgrading.



## SUSTAINABILITY



The digital system has improved food safety governance in Georgia and enhances food safety. The advantages of the system are apparent, and the authority have a strong desire to continue using the system and developing it. The future development of the system depends on available resources. When assessing resource allocation, it is important to recognize that food control is by nature a preventive public health activity that pay for itself because of increased food safety, improved fair trade and decreased foodborne illnesses.



## REPLICABILITY AND UPSCALING

The authorities plan to upscale the system to contain food safety and control data comprehensively. Foodborne outbreak data and incidence of infections caused by foodborne pathogens will be included as soon as the IT program and resources allow. Sampling data is already collected, but laboratory test results are not yet integrated in the system. Addition of these parameters permits creation of indicators that measure food safety and food control effectiveness in many ways.

This project serves as a good example of digitalising food control highlighting benefits and constraints. Its proven success in improving the measurement of food safety and food control effectiveness could encourage other countries to take the step towards digitalization of food control processes.



## CONCLUSIONS

Before the elaboration of the digital system, Georgia struggled with an inadequate situational picture of the food safety level. The knowledge of active FBOs and their compliance was not on a required level and collecting food control data was arduous and did not support trend analyses or reporting activities. The actions taken by the National Food Agency of Georgia supported by the national strategy to improve food safety, led to the development of a digital environment that now enables Georgia to make food safety and control data analyses. This has increased the knowledge of the food safety level in the country, enables assessment of interventions in food control and saves resources when drawing reports from the data.



The National Food Agency continue to develop the system and to integrate new food safety data to the extent permitted by the resources. Building a digital system that contains all relevant food safety information is demanding and requires time and resources.

It is important to acknowledge that the system must not be ready at once, but it can be built on step by step as Georgia has successfully done.

## ACKNOWLEDGEMENTS

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