

Food Safety and Nutrition Strategy 2030

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1. Introduction

1.1. Strategy background

Food Safety Strategy post-2020 is the **key strategic document of the Czech Republic** on food safety. It follows from the Food Safety and Nutrition Strategy for 2014–2020 and defines the key **priorities of the Czech Republic** in the field of food safety and nutrition.

1.2. History and presence of the strategy

Food safety is the underlying principle of the European food policy that guarantees the protection of consumers' health. Food safety comprises hygiene in food processing, control mechanisms, food chain monitoring and feed safety, and there are logical overlaps between food safety and nutrition of population.

As early as in late 1990s, as a consequence of problems caused by cases of marketing unsafe food and feed, **the European Commission decided to reorganise the food safety assurance system**. The existing legislation has been revised and new legislation has been adopted on feed, animal health and protection, hygiene, residues and novel food. Regulation (EC) No 178/2002 of the European Parliament and of the Council lays down the general principles and requirements of food law in order to create a common basis for food law both at the Union and national level. It also stipulates that decision-making in matters of food chain shall be based on the result of scientific risk assessment. That is why the independent **European Food Safety Authority (EFSA)** was established in 2002 and the EU Member States (or candidate countries) were invited to take similar approach in ensuring food safety.

At the end of 2001, the Government of the **Czech Republic** adopted Resolution No 1320/2001, introducing the new Strategy to Ensure Food Safety in response to the development in the EU and as a follow-up to the aforementioned Regulation No 178/2002. Based on this Strategy, the Food Safety Coordination Unit (FSCU) has been set up at the Ministry of Agriculture, followed by the establishment of scientific committees. In order to fulfil the requirement of scientific advice independent of political and economic interests, it has been decided that the scientific committees will be established and run by specialised units.

The food safety system in the EU is considered to be the most comprehensive in the world, thus the EU citizens enjoy one of the highest food safety standards. Yet, the past and the recent outbreaks of viral hepatitis E, crises concerning meat from illegal slaughter, or the case when ethylene oxide was found in sesame seeds indicate that even such high standards can be violated. Similarly, food safety in the Czech Republic can be considered very good and stable in the long run, but still has experienced **emergencies** such as the so-called methanol affair in 2012, or more recently fipronil egg contamination, road salt in foodstuffs, meat contaminated with microorganisms supplied to the EU internal market, etc. Therefore, **food safety cannot be seen as automatically guaranteed**, despite its very high standard ensured by the EU regulatory system.

The competent EC services seek to ensure health and well-being for several hundreds of millions of European citizens. Access to safe and nutritionally valuable food satisfying the requirements of individuals is the crucial component behind these efforts. Ensuring food safety of the continuously expanding assortment of food, increasing diversity of its origin, composition, additives and methods of production, however, is a difficult and comprehensive task. **Future challenges** will be affected also by external factors such as climate change, status of natural resources, nature of global trade, technology and innovation in food production. For competent authorities of the Member States, including the Czech Republic, this means that the food safety system must be able to respond promptly to the changing conditions. **A longer-term perspective** thus defines the main areas related to food safety

and seeks proactive and foreseeable solutions with a view to be active in preventing crises and complications.

Food safety and nutrition related matters represent a dynamically evolving broad portfolio of agendas with a direct impact on the interests of all the inhabitants of the Czech Republic. Nonetheless, the available (human, material as well as capital) resources of the Czech Republic are limited. It is therefore only natural that the **Czech Republic defines the priority areas and topics to which major attention shall be paid.**

1.3. Purpose of the Strategy

The Strategy is already the sixth food safety framework document of the Czech Republic in a row. **The Food Safety and Nutrition Strategy 2030** follows from the Food Safety and Nutrition Strategy 2014–2020, approved by the Resolution of the Government of the Czech Republic No 25/2014 of 8 January 2014. The document will be submitted to the Government of the Czech Republic for approval in line with Task No II, point cb) of the Government Resolution No 25/2014, by which the Minister of Agriculture and the Minister of Health were assigned to submit the follow-up strategic document to the Government for approval before 31 December 2020.

The document aims to set the priorities of the Czech Republic with respect to ensuring food safety and nutrition for the period 2021-2030. The top priority is to ensure food safety. The nutrition-related matters are in this context perceived as a strategic area of paramount importance for the health sector and as such are primarily addressed by the Ministry of Health.

The Strategy defines the **objectives of the Czech Republic** in food safety and nutrition. The Strategy exploits legislative as well as non-legislative tools to support the reduction of risk and potential negative impacts on human health; among other things through information and education of the public. The underlying premise of the Strategy is delivering benefits to consumers, which is why this strategic document should also contribute to increasing public trust in the food safety system, in safety, quality and nutritional value of food.

The Strategy goes hand in hand with the consumers' interests: the food available in the market is safe; consumers have access to affordable, quality and safe foodstuffs, namely now as well as in the future; consumers can make a choice based on available information and knowledge of facts, consumers are protected against the unacceptable level of risk.

The Strategy is subject to approval by the Government of the Czech Republic. The Ministry of Agriculture evaluates and reflects the comments on the Strategy, or updates the implementation of the Strategy in cooperation with the Ministry of Health.

1.4. Users of the Strategy

The users of the Strategy are first and foremost the entities involved in food safety and nutrition system that will take part in its implementation (state administration bodies, scientific research facilities). Indirectly, the users are also all the entities and persons responsible for or interested in ensuring food safety, i.e. food business operators as well as the public. Other groups of stakeholders from among industry, associations, non-governmental non-profit organisations or public institutions will also get engaged in sharing information, opinions and standpoints.

1.5. Basic terminology used

Food safety, food safety assurance system, risk analysis, health risk assessment, risk management, risk communication, risk, hazard, national and individual food consumption, nutrition, population health.

1.6. Other relevant strategic documents

The presented Food Safety and Nutrition Strategy 2030 (hereinafter referred to as the “Strategy”) is directly related to other strategic documents of the Czech Republic:

- Food Safety and Nutrition Strategy 2014–2020
- Strategy of the Ministry of Agriculture of the Czech Republic with Outlook to 2030
- Implementation Plan of the Strategy of the Ministry of Agriculture 2017–2020
- Health 2020 – National Strategy for Health Protection and Promotion and Disease Prevention
- Health 2030 – Strategic Framework for Developing Healthcare in the Czech Republic until 2030
- State Environmental Policy of the Czech Republic 2012-2020
- National Action Plan on the Safe Use of Pesticides (2018-2022)
- Action Plan for the National Antibiotic Programme (AP NAP) for the period 2018-2022
- Single Integrated Multi-Annual National Control Plan of the Czech Republic 2020-2023
- Multi-Annual Control Plan for Pesticide Residues 2021-2023
- Multi-Annual National Plan for Food Contaminants (applicable from 2023)

In the international context, the document complies with and reflects particularly the following documents:

- The European Green Deal, including the Farm to Fork strategy for sustainable food (strategic documents of the European Commission)
- EFSA Strategy
- Delivery on EU food safety and nutrition in 2050 – future challenges and policy preparedness (EC document - Joint Research Centre, JRC)
- White Paper on Food Safety

2. Definition and Analysis of the Matter in Hand

2.1. Definition of the matter in hand

In a general sense, the term food safety is included in the food quality category. The Strategy, however, focuses on **food safety in the sense of health and hygiene safety of food**; food quality is then perceived both through nutritional values and food consumption and also through significant organoleptic properties of food influencing the consumer choice. The term “bezpečnost potravin” (“food safety”) replaces the previously used term “zdravotní nezávadnost potravin” (“food health harmless”).

Food safety is an important objective and component of the EU policy. The range of food products in Europe has been expanding continuously, which also results in an increased number of requirements with respect to **scientific assessment, reduction of food-related risks, and effective food risk communication** that have to be fulfilled by the EU Member States.

In May 1997 the **Green Paper on the general principles of food law in the EU** (“Green Paper”) was published, in which the EC described the food law as a question of public interest and defined a few goals for Community food law to be achieved in the future such as ensuring a high level of protection of public health, safety and the consumer, ensuring that the legislation is based on scientific evidence and risk assessment; or placing the primary responsibility for safe food on persons doing business in food industry.

The follow-up **White Paper on food safety** (“White Paper”) of 2000 initiated a new framework for food safety in Europe and thus has become the ultimate starting point for the new food safety policy.

Food safety is seen by the public primarily as a protection of consumer (health), which constitutes the main legal basis, but which also covers legal aspects of the entire food chain. **Food safety shall be guaranteed at any step of food production and processing chain** – “from farm to fork”. The new approach has been described as a concept of effective and comprehensive protection of consumers’ health.

The key elements of food safety law have been defined as follows: precautionary principle, **risk analysis based on scientific knowledge** (the principle of scientific basis for food law), protection of animal health and welfare and plant health (principle of comprehensive and integrated approach), free movement of food products in the EU and protection of consumers’ interests (i.e. the principle of traceability of feed and food, the principle of primary legal responsibility of a food or feed business operator for ensuring food safety, principle of transparency).

Essential data for scientific risk analysis can be obtained through controls and monitoring, laboratory analytical results, and nutritional epidemiological studies. Continuous monitoring, management and analysis of these data are conducive to early identification of potential hazards, which is why it is necessary **to build and support the scientific capacity involved in risk analysis**. Food production and consumption are a component part of the comprehensive food system, which is affected by multiple, often unpredictable factors (demographic development, environment, availability and quality of resources, climate change, technological advancement, global economy) that may also raise new questions, challenges or issues in the food system.

The vital role is played by legislation. **The legislative framework** of both the EU and Czech Republic governing food safety is robust and functional. Nevertheless, management and decision-making shall be able to respond to slow and gradual or, on the very contrary, to urgent and rapidly changing development. This can be achieved by creating a

comprehensive system that makes it possible to forecast potential future changes and challenges and contemporaneously to respond to them in a timely manner.

In the EU, the concept and legal framework of elements serving better preparedness to future challenges such as harmonisation and increased effectiveness of approaches to risk assessment, inclusion of risk-benefit assessment approach, introduction of an effective early warning system for emerging hazards, adjustment of official controls and inspection activities to future needs, provision of clear information on food to the public, and also investments in food and nutrition education will be further reinforced. It is the **education**, which was in the EU as well as in the Czech Republic, identified as the corner stone of a society capable of addressing both the current and future issues related to nutrition and health.

Consumers may make their personal food purchasing and eating decisions only if they are well informed. Therefore, transparent **risk communication** is crucial and information of food safety and nutritional values must be accessible and presented in an appropriate form.

In order for the food safety mechanism to be really efficient, various levels shall be taken note of, reflected and first and foremost incorporated: food safety laws and regulations (mandates and scope of responsibility), food safety scientific standards (guaranteeing a high-level protection of public health), food inspection, laboratory services, law enforcement, education, availability of relevant information, and communication with all stakeholders in the food chain, including consumers.

The European legal framework provides an integrated and reliable level of protection of European consumers; the national actions alone would not be able to provide protection in the globalised world; that is why a necessary part of the food safety policy and strategies is also the support for **national and transnational cooperation**, e.g. with EFSA.

At the European level, the risk assessment and a major part of risk communication are the responsibilities of EFSA, whereas risk management and to some extent also risk communication remain the political task of the European Commission and the Council of the European Union. In the EU Member States, however, the individual steps of risk analysis have evolved differently.

In the Czech Republic, the food safety system has been developing ever since 2001, following the publication of the White Paper on food safety, when the Resolution of the Government of the Czech Republic No 1320 on Food Safety Strategy in the Czech Republic was adopted. The food safety assurance system in the Czech Republic is coordinated by the Ministry of Agriculture and the Ministry of Health in cooperation with other ministries and other state administration organisations, non-governmental non-profit organisations, professional and consumer associations, state and non-state research institutes, higher-education institutions, and universities. **Thus, the creation and operation of a well-functioning and flexible food safety and nutrition system through risk assessment, risk management and risk communication are seen as the responsibility of the Government.**

Contrary to the extensive legal framework governing the food safety in the EU, the **nutrition** policy framework is mainly the national responsibility. Support for nutrition of population and promotion of appropriate healthy eating habits is an integral part of agriculture and food production related policies and also policies on health, prevention of communicable and non-communicable diseases as well as education and motivation of population for health promotion. Nutrition related matters permeate not only in the issues of production, processing and availability of quality food in the domestic market, but also in food safety issues.

2.2. Current situation and foreseen future development

The tasks and priorities defined by the previous strategic documents on food safety and nutrition are largely long term in nature. The Food Safety and Nutrition Strategy 2030 follows on from these tasks and priorities and also defines lots of new ones that respond to the current needs and situation.

A) Positive trends

The food safety system is well-functioning and consumers are fully aware of it.

The food safety system, which is in line with the White Paper on food safety based on the risk analysis principle, has been developing in the Czech Republic ever since 2001. During this period many steps with a positive effect on its functioning were implemented. An important role is played by good cooperation of responsible ministries, the Ministry of Agriculture and the Ministry of Health in particular.

According to the Eurobarometer survey of 2019¹, consumers have limited awareness of how the EU food safety system works. A total of 43% of respondents know that there are regulations in place to make sure that the food you eat is safe; 28% know that to decide how risky something could be for you to eat, the EU relies on scientists to give expert advice, and 19% know that the EU has a separate institution that provides scientific advice on the safety of food. When choosing food, the situation is much better – most of the respondents (71%) say either that food safety is among their concerns, or that they take it for granted that the food sold is safe (23%). The situation in the Czech Republic is similar to that in the EU.

The Czech consumers more than ever prefer the Czech food; also, with respect to food safety and environment.

The Eurobarometer of 2019 also indicates that for the Europeans, including the inhabitants of the Czech Republic, food safety is one of several important factors when buying food – the most important factors for Europeans when buying food are the following: where the food comes from (53%), cost (51%), food safety (50 %) and taste (49%). Nutrient content is considered slightly less important (44%), while ethics and beliefs (e.g. considerations of animal welfare, environmental concerns or religion) rank lowest in importance (19%). Overall, 41% of respondents say that they are personally interested in the topic of food safety.

The Czech food has been consistently preferred by roughly half of the shoppers², the number of those who believe that the quality has improved and that the Czech food is better than foreign food has remained almost the same. According to the Food 2020 survey³ conducted by the Public Opinion Research Centre (CVVM), for half of the Czechs the origin of food is one of the most important criteria when buying food, while for 19% it is the most important criterion. When the environment is considered, 77% of responding consumers prefer food produced in the Czech Republic when buying food. 30% of respondents is interested in the topic of local food and these are often people who care about the environmental impacts of production of food they are buying. For consumers, local food is associated with quality, freshness and tastiness.

The public and media become ever more interested in safety and nutritional quality of food in relation to health impacts, prevention of chronic inflammations in particular.

The consumer awareness is good and the demand for topical, accurate and verified information, including the interest of the public and media in the results of official food

¹ Special Eurobarometer Wave EB91.3: Food Safety in the EU. (<https://op.europa.eu/en/publication-detail/-/publication/0597f4f8-8b2b-11e9-9369-01aa75ed71a1/language-en>)

² STEM/MARK, a.s., Kvalita potravin – jejich značení a vnímání / 2018

³ CVVM SOÚ AV ČR, Potraviny 15. – 31. 8. 2020 (Public Opinion Research Centre, Institute of Sociology, Czech Academy of Sciences, Food 2020) (https://cvvm.soc.cas.cz/media/com_form2content/documents/c2/a5319/f9/OR201118.pdf)

controls, continues to increase. According to the Eurobarometer survey of 2019, the Europeans have a high level of awareness of food safety topics. The most frequently reported concerns relate to antibiotics, hormones and steroids in meat, pesticides and their metabolites, environmental pollutants, and food additives. Respondents are most likely to be concerned about antibiotic, hormone or steroid residues in meat (44%), followed by pesticide residues and their metabolites in food (39%), environmental pollutants in fish, meat or dairy (37%) and additives like colours, preservatives or flavourings used in food or drinks (36%).

The most trusted sources on food risks for Europeans are scientists (82%) and consumer organisations (79%), followed by farmers (69%), national authorities (60%), EU institutions (58%), NGOs (56%) and journalists (50%). A minority of respondents say they trust supermarkets and restaurants (43%), food industries (36%) and celebrities, bloggers and influencers (19%).

The most common source of information about food risks is television. More than two thirds of Europeans (69%) say that television is among their main sources of information, it is followed by the Internet (excluding social media) (46%), newspapers and magazines (38%) and family, friends and neighbours (37%). Younger respondents are more likely to mention social media.

These trends are also seen in the Czech Republic. With the rise in the standard of living, the Czechs pay ever more attention to their health and adjust their diet accordingly. Not only favourable economic situation, but also education and awareness as well as fashion trends play an important role. In recent years, the interest in health and safe food has increased multiple times. The public's interest in energy and nutrient composition of food, information on healthy diet and prevention of non-communicable diseases, especially prevention of obesity, type 2 diabetes, cardiovascular diseases, and cancer in the long run, has been growing.

A greater interest in information on food is expressed by women and overall, there is a higher interest in safe and healthy food for children.

Certain positive (sometimes only fashionable) trends appear and persist in food consumption.

The long-term trends include a slightly increasing aggregate consumption of cereals, fruit and vegetables (fresh, local and exotic in particular), milk and dairy products, and on the other hand a decline in consumption of sugar, sweets and alcoholic beverages. However, there are no updated national data on individual food consumption (the latest data are from 2004), which has an effect on population health. Considered positive is an increased demand for food produced by organic or integrated production, which boosts the interest of producers and retailers in this food and also in local products. There is also a significant group of consumers who avoid e.g. gluten and lactose.

Vegetarianism (including veganism, consumption of raw food, etc.) is becoming an important trend in eating which brings a growing interest in food of plant origin such as plant-based drinks, meat substitutes, vegetable only dishes, etc. For some trends such as eating insects that now seem fashionable or marginal it is still too early for evaluation, even though e.g. the insect proteins are used ever more often. Yet, there is an increased interest in protein production from non-traditional raw materials that are to a higher extent used in food. Plant-based proteins are popular and their production is on an increase, so far more often abroad, even though the first steps have been taken in the Czech Republic as well.

According to the 2019 Eurobarometer, two thirds of the EU citizens have changed their consumption behaviour as a result of information that they have heard or read about a food risk. Two thirds of respondents (66%) say that they have changed their consumption behaviour as a result of information that they have heard or read about a food risk (of whom 33% made a permanent change and 33% changed their behaviour for a while). Changes in consumption behaviour are more common among women (particularly in those in

the middle age bands, and those with higher levels of education). These findings support the need to acquire the latest data on individual food consumption, without which health risks cannot be reasonably assessed.

A major emphasis continues to be placed on child nutrition.

Provision of school catering is laid down in legislation. Schools or operators of these facilities shall fulfil, apart from the obligations imposed upon catering facilities by the food law, also the obligation to comply with the nutritional standards for school meals in line with the Decree on school catering. A fairly high share of children (approximately 75%, which is roughly 1.5 million of children, and also 0.5 million of adults, teachers, seniors) eat in school canteens. The Ministry of Health, through the Regional Hygiene Stations, has traditionally focused its activities apart from state health inspection also on monitoring the nutritional standard of school meals and related procedures aimed at introducing healthy diet principles in the preparation of meals in these facilities. An example thereof is nutritional guidelines for school canteens published by the Ministry of Health. In compliance with the results of the nutritional analysis of school lunches made available to public health protection authorities, one of the goals is to develop nutrition software facilitating transparent controls. It will help school canteens achieve the consumption food basket, i.e. to prepare nutritionally balanced dishes for individual age groups of boarders. The example of school canteens can be used to demonstrate how important it is in practice to combine the performance of state health inspection and nutrition intervention, in which apart from public health protection authorities also school catering methodologists and inspectors as well as nutritional therapists participate. Also considered shall be the WHO strategy to support breastfeeding adopted earlier, strict enforcement of the International Code of Marketing of Breast-milk Substitutes of the WHO and UNICEF as amended by follow-up resolutions, or introduction of healthy diet principles in catering for groups of children defined by age, on which the guidelines of the Ministry of Health are based.

Education for health and healthy eating habits continues in elementary schools.

Schemes covering health and healthy eating education have become a permanent part of school education. Schemes promoting consumption of fruit and milk and milk products have successfully been run in elementary schools for many years already. Since September 2017, School fruit, vegetables and milk scheme has been running in schools, which combines two previous schemes called the School fruit and vegetables scheme and School milk scheme. It is a scheme of the European Union defined by the Union law. It supports not only the distribution of fruit, vegetables and milk products, but also voluntary educational programmes in which pupils learn about the importance of developing healthy eating habits that play an important role in prevention of the onset and development of chronic non-communicable diseases, the so-called lifestyle diseases, and also get introduced to the methods of production of individual types of food. The project aims to contribute to a permanent increase in the consumption of fruit, vegetables, milk and milk products, and thus to contribute also to the development of health literacy in this population group. Indirectly, the project is also a kind of education of future consumers and it is implemented through cooperation of the Ministry of Agriculture, Ministry of Health and Ministry of Education, Youth and Sports. Nutrition education of children and youth promoting healthy eating is a component part of the so-called Framework Educational Programmes of the Ministry of Education, Youth and Sports, which are continuously updated by the Ministry of Health in chapters dedicated to healthy lifestyle education. For the upcoming period, also other health related projects are considered, which do not necessarily have to be supported from the EU. They can also be financed at the national level. One of the options to go for is an increased use of rapeseed oil in school canteens, which is a quality traditional national product and can greatly contribute to better health condition through the ratio of omega-6 to omega-3 fatty acids, which is nowadays considered important with respect to the development of chronic inflammation.

Collection of data on hazardous agents, food composition and food consumption is being harmonised to increase the quality of data and their timely availability for decision-making.

The EFSA collects lots of information and data pursuant to the applicable EU law and commitments of the Member States and analyses them. These data are used by the EFSA as a basis for the elaboration of its scientific and technical outputs. It consistently seeks to work with the official data forwarded by the competent authorities of the Member States or at least with the verified data, and to provide their proper interpretation. The data format used is not suitable for presentation to the laymen public, who is therefore informed through summary reports with data interpretation. The harmonisation of data collection and increasing their quality is still a challenge that brings about additional tasks such as the selection of the best data collection techniques, staffing and adequate knowledge of data, data standardisation, etc.

Basic food composition data for the Czech Republic are available.

Contrary to the past, there is a food composition database available – NutriDatabase.cz (Food composition database of the Czech Republic). The application is operated by the Centre for Food Composition Database of the Czech Republic, which is a joint working group of the Institute of Agricultural Economics and Information (authorised by the MoA) and the Food Research Institute Prague (FRIP), in cooperation with the European Food Information Resource Network (EuroFIR). It is a reference source of composition data on roughly 1,000 staple foods (as at the end of 2020), which is not much considering the many times higher number of food products in the market in the Czech Republic. The database provides the data on nutritional values, justification of nutritional benefits, etc.

There is a plethora of other food related sources and databases. One of them being the EFSA tool called DRV Finder providing access to Dietary Reference Values (DRVs). These are science-based reference values for the daily intake of healthy population by life stage and gender, they are not nutrient goals or recommendations for individuals. The DRV Finder tool was launched in 2018 and is available in many languages, currently also in the Czech language.

B) Negative trends

Increase in consumer misleading and adulteration of food.

In recent years, the number of cases of food adulteration has gone up. Food adulteration means production of food from lower-quality ingredients, substitution of ingredients or e.g. sale of foreign foodstuffs that are claimed to be of Czech origin. The food quality is lower than the quality declared and the food product characteristics are not met. Ever more important is also correct food labelling since there are intentional deficiencies in labelling aimed at concealing the presence of certain ingredients (often e.g. food additives, cheaper raw materials, lower content of the main raw material, etc.). In quite a significant number of cases, adulteration of food is close to non-compliance with food safety requirements and the consumer alone has no chance to find out that the food has been adulterated. In certain commodities, adulteration is a global issue.

Investigation of misleading practices in catering establishments is the responsibility of state health inspection and suspected misleading practices are often subject to petitions filed by consumers. Recently, more attention has been paid to allergen labelling in response to new food labelling legislation (e.g. serving meals with gluten-free declaration though they contained gluten). In some cases, raw materials were substituted during the preparation of meals (e.g. substitution with other types of meat, fish, substitution with other sorts of cheese, substitution crab meat sushi rolls with surimi sticks), false identity of alcoholic as well as non-alcoholic beverages, etc.

A specific issue of consumer misleading is the dual food quality, when producers sell different food with different composition in different countries in the same packaging. In this case it is, however, not a food safety issue.

Inspection of Internet sales of food is still complicated.

The Internet sales of food (including the sales on social networks) have been growing and this trend will surely continue. The share of consumers buying food (including dishes) online has consistently been increasing and the same applies to the number of registered online food retailers.

Inspection of online food sales (but also of articles and materials intended to come into contact with food – e.g. packaging), however, represents a very complex area since the operators are often difficult to reach and collection of samples e.g. in the form of purchasing foodstuffs to be inspected is accompanied by numerous complications. E.g. in 2020, the Czech Agriculture and Food Inspection Authority (CAFIA) carried out approximately 1,000 inspections of online grocery sales and revealed deficiencies in roughly 50% of cases. The deficiencies most often concern the provision of mandatory food information on the Internet or labelling of food sold through Internet during its delivery, making unauthorised health or nutrition claims, making claims on the Internet or on the product attributing medicinal properties to the product and selling food supplements with unauthorised components. Many online food retailers also do not realise that they are food business operators and fail to meet the basic registration obligation.

Changes in farming technologies and extensive use of chemicals in agriculture affect the quality, safety and subsequently also the nutrient composition of food

The use of pesticides in agriculture results in the detection of their residues and metabolites in food or raw materials for food production, which may pose a risk to human health. It is necessary to further support the development and application of non-chemical plant protection methods. We must also bear in mind that the products are also applied outside farming, e.g. on railway land, roads, paths, golf courses and other public spaces or infrastructure. Moreover, they are applied by non-professional users and these applications may thus become the potential source of residues of active substances.

An adverse effect of changes in agricultural land management practices (simplified cropping sequence without soil improving crops, no-tillage system, etc.) continues to be the frequent presence of mycotoxins in agricultural products.

New hazards and risks are emerging and this trend cannot be avoided in the future.

Due to intensified globalisation, increased business interrelations and climate changes, new hazards and risks are emerging related mainly to the spreading of biologic agents, pests and pathogens from other climate zones. Also, new techniques and technologies are being developed, which are applied in the food chain, e.g. nanotechnologies, genetic engineering or synthetic biology. Successful identification of the emerging risks lies at the core of protection of public health and environment. In recent years, the EFSA has adopted a series of practical steps with a view to help identify the emerging risks, including the development of the methodological framework, introduction of operational procedures to identify the emerging risks, evaluation of selected sources of information and selection of suitable tools to collect and filter the relevant information.

Currently, the emerging risks, however, do not raise greater public concern than the risks already known, which is why informed and open communication on risk nature and perception as well as on the level of uncertainty it brings is needed. As emphasized by the study initiated by the EC on future scenarios of food safety and nutrition, new risks in food production will always emerge, therefore more data, methods, expertise and scientific advice will be needed.

Scientific risk assessment has long been underfunded.

The importance of scientific risk assessment in the food safety assurance system does not reflect its actual position and the current requirements of the public. A distinction shall be made between full and rapid risk assessment. Rapid assessment is carried out at a fairly good level, but funds are missing for financing activities supporting the full risk assessment. Even though these full assessments are mostly taken over by the Czech Republic from international organisations (EFSA, WHO, FAO), the parts concerning the exposure assessment and risk characterisation that are country-specific cannot be taken over. In recent years, the Czech Republic lagged behind some other EU Member States. Risk assessment in the Czech Republic is underfinanced and the method and scope of requests sent to highly professional workplaces are inadequate.

Data on individual food consumption are still unavailable.

At present, topical data on individual food consumption that would be collected on a representative sample of population of the Czech Republic are not yet available in full. Such survey was conducted by the National Institute of Public Health for the last time in 2004 (Individual food consumption study). Nevertheless, the availability of detailed and current data on food consumption is a necessary prerequisite for relevant determination of exposure to harmful substances and estimates of nutrient intake in the field of nutrition. The absence of these data thus hinders also the targeted communication with the public on nutrition and also places certain constraints on objective risk assessment. Health risk assessment could theoretically be based also on other types of data on food consumption that are continuously collected and published by the Czech Statistical Office, i.e. on the so-called global consumption or household budget analysis. These data, however, can be used to a limited degree only since results of assessment are burdened with a high degree of uncertainty and by no means can be used to determine the dietary exposure in different population groups. Data collection and evaluation of individual food consumption is highly desirable also with respect to international cooperation, including the Rapid Alert System for Food and Feed (RASFF).

Access to biotechnology continues to be restrained.

Globally, new technologies that can have a major effect on production are used in agriculture and food industry ever more often. These are primarily genetic modifications and animal cloning. Biotechnology is one of the rapidly evolving areas of research and development with far-reaching application. Its application in practice in the EU is complicated.

Animal cloning continues to be rejected by both the public and regulators, mainly for ethical reasons (so far unsolved issues regarding the efficiency of this method and related unacceptable impacts on animal health and welfare). The approach to this method will not change in the near future and its use in food production is therefore unlikely.

Gene engineering is a rapidly evolving scientific discipline, which focuses on altering genetic structure of an organism by modifying, removing or introducing DNA. New genome editing techniques facilitate much faster and more accurate results than conventional breeding techniques. GMOs have been used in food and feed industry since late 1980s and despite the absence of any adverse health effects their use is still questioned. Based on the Judgment of the Court of Justice of the European Union of July 2019 (C-528/16), by which it found that organisms obtained by mutagenesis techniques are to be considered genetically modified organisms and are subject to the obligations under the GMO Directive, the products obtained through these techniques shall go through an approval process before their placing in the market, due to which their use is very complicated.

Proportion of overweight or obese people, children in particular, is growing.

In the Czech Republic, a half of adults still have higher than normal weight, even though e.g. between 2012 and 2016 the increase in the number of children with overweight halted and the situation became stable, but the efforts to reverse this long-term trend failed and the

number of obese population has been increasing since early 1990s. Diseases associated with obesity are the second leading cause of preventable death, close behind tobacco use. Obesity increases the risk of many diseases, especially cardiovascular diseases (coronary heart disease, arterial hypertension, heart failure, cerebrovascular accident, thromboembolic disease), metabolic diseases (type 2 diabetes), some types of cancer (colorectal cancer), and musculoskeletal disorders (osteoarthritis of weight-bearing joints). Obesity also increases the risk of respiratory and gastrointestinal diseases (non-alcoholic fatty liver diseases) and can be accompanied by mental and psychosocial problems.

The proportion of obese or overweight children has been on an increase. The occurrence of overweight in childhood increases also the risk of overweight in adulthood. The share of obese children has tripled over the last 20 years according to the World Health Organisation. The main cause of obesity is the deteriorating lifestyle, with an imbalance between energy intake and expenditure.

Individual efforts exerted by various entities to promote healthy eating and adequate physical activity are ineffective on a larger scale. Synergy of government policy, public administration and food industry is necessary.

Lower energy expenditure due to physical inactivity leads to higher requirements as to the nutrient content of foods.

The lack of natural movement and physical inactivity in children (that go hand in hand with modern technologies such as computers and the Internet) result in their lower physical fitness, often due to a huge supply of and an easy access to overabundance of food high in energy.

Even adult consumers prefer ready-to-eat or easy-to-prepare foods with excessive saturated fats and salt content and drinks containing too much sugar. According to the WHO, fats should not exceed 30% of the total energy intake, added sugars should make up less than 10% of the total energy intake and salt intake should be less than 5 grams a day.

This should, as a prevention of serious diseases caused by bad eating habits and low physical activity, lead to producing, offering and above all consuming quality, nutritionally complete, lower-calorie foodstuffs. In this area too, cooperation is necessary at all levels, i.e. at the level of the Government of the Czech Republic, public administration as well as food industry, with a view to reformulate food products to improve their nutrient composition.

2.3. Revision of the existing actions

The starting point for drafting the Strategy and defining the priorities of the Czech Republic for the upcoming period is the agriculture and food industry framework, specifically the **Strategy of the Ministry of Agriculture of the Czech Republic with Outlook to 2030**. This document has been crafted with account taken of trends in the development of Czech agriculture and food industry and in relation to the original “Strategy for Growth – Czech Agriculture and Food Sector” in the framework of the EU Common Agricultural Policy after 2013“. In accordance with the programme statement of the Government of the Czech Republic, the Strategy of the Ministry of Agriculture focuses on ensuring conditions instrumental to increased self-sufficiency of the Czech Republic in basic agricultural commodities, improved consumer protection as well as food safety in the Czech Republic.

Another pillar supporting the setting out of priorities for future (in the EU) is the document compiled by the Joint Research Centre (JRC) of the European Commission entitled **Delivering on EU Food Safety and Nutrition in 2050 - Future Challenges and Policy Preparedness** of 2016. Similar topics are addressed also by the document called “European Food Systems in a Changing World” published by the European Science Foundation and European Cooperation in Science and Technology in 2009 or “50 trends influencing

Europe's food sector by 2035" published by the Fraunhofer Institute for Systems and Innovations Research ISI in 2019.

In many areas related to food safety, major developments have been reported since 2010, when the **Food Safety and Nutrition Strategy for 2010-2013** was approved, followed by the **Food Safety and Nutrition Strategy 2014-2020**, whereas it was not the case in other areas. In a number of cases the development is positive, in others the situation remains unimproved. The presented document reflects these trends – describes the opportunities and also defines the weaknesses that need to be dealt with. When planning activities, taken into consideration is the public health, impacts and effects of intended activities, conditions prevailing in the Czech Republic and legitimate interests of all the stakeholders.

Actions and activities in the field of nutrition stem from the document called **Health 2020** – National Strategy for Health Protection and Promotion and Disease Prevention. This document follows on from the policy framework of the World Health Organisation (WHO) "Health 2020", which puts an emphasis on improving health and well-being of population, reducing health disparities and strengthening the role of public health system. The current premises are defined by **Health 2030**, a new document of the Ministry of Agriculture, which is complemented by the Strategy.

Food safety is also covered by the strategic documents of the Czech Republic, namely the **National Action Plan on the Safe Use of Pesticides 2018-2022** for plant protection products, or the **Action Plan for the National Antibiotic Programme for the period 2018-2022**.

2.4. Development in case of non-adoption scenario

The Strategy aims to create and strengthen the food safety system so that only safe food is placed in the market and the public can trust the food safety assurance system.

The system is dynamic and undergoes continuous development, to which it is necessary to respond. It shall be noted that approach to food safety is similar across the EU since it builds on the same starting points. Food produced by Czech producers will be saleable in the other EU Member States only provided no one questions the functioning of the Czech food safety assurance system. It is therefore obvious that the competent authorities of the Czech Republic shall follow the current trends and gradually make changes and adapt to the evolving conditions mirroring the development of the entire system in the EU.

The food safety and nutrition system in the Czech Republic is fully functional, judging from its basic parameters. It means that even if the Strategy fails to be implemented, all those involved in the system will deliver under the existing conditions (scientific advice will be provided with a very limited capacity for the performance of risk assessment, legislative as well as official controls will be carried out and sources of information for the public will continue to exist). In other words, expert units and structures will continue to perform activities in line with the relevant applicable legislation adopted after 2000. However, no updated single framework will be available that would support specific parts of food safety, which can thus become vulnerable and stop fulfilling properly their function. No uniform state policy reflecting the potential threats to the development will be in place, due to which it will be impossible to get prepared to them and to respond fast enough. There will be no single state policy of consumer protection, which will potentially impact consumer health and result in a low trust in the potential protection by state. The sustainability of risk assessment as well as functioning of comprehensive scientific advice necessary for decision-making in the entire food chain (in line with the requirements of Regulation (EC) No 178/2002) will be jeopardised.

2.5. Summary of results of key analyses

In its long-term horizon, the Strategy follows on from the document published by the Joint Research Centre of the European Commission entitled “**Delivering on EU Food Safety and Nutrition in 2050 - Future challenges and Policy Preparedness**”, which aims to aid policy makers in drafting food policies or in assessing and adapting the existing policies and creating a regulatory framework until 2050.

The study looks into a number of major drivers such as global trade, EU economic growth, agro-food chain structure, technology uptake, social cohesion, food values, climate change, or depletion of natural resources and world population growth.

Food values reflect the importance consumers give to price, taste, convenience, environmental sustainability, health effects, fair-trade, ethical practices, animal welfare, etc. when choosing their food.

The study as such employed the methodology of food policy scenario development, with 4 different scenarios constructed:

- **Global Food scenario** envisages interconnected global food chain with increased global trade and more concentrated food industry (projection of the situation in which the EU finds itself);
- **Regional Food scenario** reflects moving towards self-sufficiency and abandoning of major international trade agreements (based on the model of depletion of natural resources and climate change effects on population);
- **Partnership Food scenario** works with an economically weak EU with close trade and food policy ties with a strong global player and little trade with the rest of the world. The stagnation of the European economy would contribute to the EU losing importance in geopolitics and trade, especially in agriculture and food;
- **Pharma Food scenario** of food policy describes a world with globalised trade, a strong EU economy, and a population that strives for a healthy lifestyle. To achieve this, people turn to functional, processed foods and even foods with added pharmaceutical substances (“phoods”); sometimes because fresh produce may be limited, at other times in a personalised diet regimen aimed at optimising their health status.

The analysis of individual scenarios and challenges has revealed a number of common issues. These **key insights** are the starting point adapting the existing food safety and nutrition framework:

The legislative framework governing food safety is robust and appropriate

The general principles of EU food safety legislation cover all essential elements to ensure the safety of the feed-food chain. Implementation could be improved in certain areas by giving better guidance or through legislative acts (for example, implementation of the HACCP concept varies among the EU Member States as well as the food business sectors).

Action needed for improving the effectiveness of EU nutrition policies

In view of an anticipated increase in the incidence of nutrition-related non-communicable diseases and the related health and economic impacts, considered appropriate seems to be the intervention via regulatory or non-regulatory actions (nutrition literacy, taxation of food high in certain nutrients, incentives for purchasing certain foods). Ranking among actions that need to be further developed is also the legislation regulating the selection of food offered in school vending machines selling food and beverages and in snack bars, introduced in 2016 by the Ministry of Health and the Ministry of Education, Youth and Sports.

Harmonisation of risk assessment approaches (including health benefits and socio-economic consequences)

The future development of risk assessment foresees the widening of evidence base through efficient sourcing of relevant data, further development of approaches to address the

cumulative effects of long-term or chronic exposure to low levels of chemicals or chemical mixtures, etc. Future risk assessment procedures should allow also weighing health benefits against risk and consider socio-economic consequences and potential different effects on men and women, food security, environmental factors and impact on innovation.

A suitable and harmonised metric for benchmarking and monitoring food safety performance needs to be established

Effort to identify and incorporate indicators to characterise how well the food safety system functions across the EU. To some degree, now already the indicators such as the development of incidence of foodborne illnesses, the number of novel food technologies patented, the number of food recalls, etc. can be used, which signal potential necessary adaptations of the system.

To create an effective early warning system for emerging hazards at EU level

Effort to develop a proactive instrument that could capture weak signals transmitted from different sources (e.g. information about syndromes in human or animal populations based on searches in electronic media, website, etc.) and translate them into useful information that could allow an early-on identification of a developing food safety incident.

Adaptation of official control and inspection services to future needs

Focusing of control systems more on preventive process control and not on end-product testing with a view to enhance the performance of the current system. This area covers e.g. the e-commerce.

Investment in providing food safety and nutrition education to the public

Education is a key element necessary for preparing the food safety and nutrition system for the future. Providing objective and comprehensive information constitutes the basis for engaging consumers in processes of shaping the future food system, including an informed debate about novel foods and technologies. Nutrition education can empower consumers to make informed and healthy dietary and lifestyle choices. In educational activities, account shall be taken of different approach of women and men to their health, their specific needs in this area and elimination of potential negative gender stereotypes.

A specific area is the specialised technical education and its standard. Loss of scientific and technological expertise in the EU could have serious repercussions for the food system, namely increased vulnerability to food fraud, inappropriate use of novel technologies leading to food safety hazards as well as negative impacts on the EU economy due to the central role the food sector has in it.

Future challenges to be considered:

- Sustainability of the current food safety system in a global world
- Suitability of the current EU risk assessment procedures for new food ingredients, food products and food-related technologies
- The loss of scientific and technological know-how in Europe
- Abundance of voluntary food information and increased opportunity for misleading information
- Failure to provide appropriate food safety information to the consumer
- Inadequate food safety and nutrition literacy, loss of food traditions and increased exposure to unreliable sources of information
- Greater reliance for food safety on individuals engaging in food production
- Diets based predominantly on highly processed foods and decreased availability of fresh produce
- Differences in the handling of food in third countries due to diverging food safety standards
- Ability to perform official food-related controls
- Reduction of food waste

- Re-introduction of food waste and organic side-stream products in the food chain
- Use of recycled plastics
- Pressure on sustainable food production and related impacts on food safety

3. Vision and Strategic Roadmap

To ensure food safety is an obligation of food business operators, which is why this role cannot be played by the state administration authorities. It is their task to ensure stability and transparency of the food safety system, which sets out clear rules for food business operators to ensure the safety of food they place in the market. This is the common primary goal, towards which all activities and objectives proposed by the strategy are steered.

This goal can be achieved via implementing individual actions and objectives. These actions and objectives need to be specified with respect to our needs and possibilities, which are determined our technical, staff and financial capacities that are very limited in certain areas. Taking this into account, we may say that the Czech Republic is very strong in risk management and risk communication, but suffers from the shortage of staff and funds for risk assessment.

Therefore, instead of a broadly conceived policy with interventions in many areas, we suggest to concentrate on just a few core areas and their development. That is why two strategic objectives with four priority areas have been defined. For each priority area focus areas have been set. Specific actions will be defined by the action plan.

3.1. Vision

Consumers expect that the foods they buy in stores are safe. This expectation is based on the underlying assumption of food law that only safe food can be placed in the market. Experience gained by consumers ever since the introduction of the current food safety system after 2000 fulfils this expectation. Yet, once in a while, we are faced with food safety issues, which often become of international dimension due to the existence of the EU single market.

Vision: Robust, flexible and sustainable food safety system ensures that only safe foods are placed in the market by food business operators. Consumers themselves actively search for easily accessible information on food, thanks to which they can make informed choices. The offered variety of food facilitates healthy eating that promotes health of the population and its selected groups at risk.

3.2. Strategic objectives

Strategic objectives reckon with the involvement of public as well as stakeholders in the creation and use of information on food, extension of scientific and information base and optimisation of the access to data, support for building scientific capacities for risk assessment, risk management and risk communication, preparation for future challenges in risk assessment and creation of conditions conducive to cooperation and work culture promoting the set out objectives.

The strategic objectives do not strive to cover the full spectrum of food safety and nutrition topics.

3.2.1 Strategic objective 1

In respect of the choice of safe, quality and affordable food, the first **strategic objective** is to enable production and placing in the market of safe food only, to provide verified information on food safety and quality, and thus to improve the protection of consumers, their rightful interest and trust in food safety system and its sustainability.

3.2.2. Strategic objective 2

The strategic objective **in the field of nutrition** is the priority focus on healthy diet supporting health of the population and selected groups of population at risk with increased effectiveness of health promotion and protection, health education and prevention of nutrition and diet-related diseases.

3.3. Priority areas

1. Food products in the market do not pose a risk to human health

The purpose of the food safety assurance system is to eliminate as much as possible the risks to human health. Experience shows that the biggest risks are represented by chemical and microbiological hazards, to which particular attention should be paid. All hazards cannot be fully eliminated, but the attendant risks can be reduced to an acceptable level. Some risks, however, are still unknown, particularly in chemical substances, or the principle of their negative effects has not been fully understood.

2. Food safety system has for a long time been functional and sustainable

This area addresses the very essence of the food safety system, its basic elements, key entities and their ability to consistently accomplish their tasks. Stable legal environment, clearly defined roles and powers of individual entities and links between them are vital to fulfil this priority. It is essential to encourage effective cooperation between all the organisations involved in the system. It is also necessary to adapt the system to the changing conditions, shaped particularly by multiple global drivers that cannot be influenced at the national level. This priority area is crucial for the fulfilment of the strategic objective 1.

3. Educated consumer can make an informed choice

The results of the review of the general food law conducted in 2018 indicated that food risk communication is generally not considered effective enough by the public, which impacts the trust of consumers in the results of risk analysis. It is therefore necessary to ensure transparent, continuous and inclusive risk communication throughout the entire process of analysis, with the involvement of those who carry out the risk assessment and risk management. This should result in ensuring high level of protection of human health and consumer interests.

The existing food safety system is robust enough to ensure that only safe food gets to the consumers if the rules stipulated by the legislation are adhered to. These rules cover the full length of the “farm to fork” chain. Nevertheless, the effect of these rules ends in retail, where consumers mostly buy their food and where the responsibility for food safety is assumed by the consumer. It is therefore obvious that education of consumers must not be neglected.

4. Nutrition

Adherence to healthy diet principles is a basic prerequisite for maintaining good health and preventing diseases caused by inadequate nutritional habits. Overweight and obesity, but in a part of the population also malnutrition, and a number of chronic non-communicable diseases currently rank among the most serious diseases. They include also cardiovascular diseases, type 2 diabetes, hypertension, eating disorders in adolescents, tooth decay, osteoporosis or cancer. Overall, these diseases represent the leading cause of disease and death in the Czech Republic (just as across the European region). As such, they represent a much bigger social and economic issue than food safety, which is generally at a high level in the EU.

It is therefore in the interest of the state to provide scientifically based information to the population, food producers and processors with a view to ensure adequate nutrition in terms of quantity as well as quality. In all this, account shall be taken of cultural traditions and

history, social, but also environmental and economic aspects (sustainability of food production).

4. Description of Objectives by Priority Area

4.1. Priority area 1: Food products in the market do not pose a risk to human health

Load of chemical substances in food chains decreases

A human being is every day exposed to the effects of chemical substances, of which many represent a health risk. Chemical substances may be present in food naturally or as contaminants from the external environment. Some are “only” toxic, others are for instance carcinogenic, mutagenic or with negative effects on the endocrine system. It is this group of substances, which turns the traditional relation between the dose and its effect on its head since for the endocrine system only a very low level of these substances is often very risky. The issue of combined effects of chemical cocktails and how to assess the related risks has become a hot topic.

Currently, we cannot effectively prevent the entry of chemical substances into food chains. Our aim shall therefore be to get to know as much as possible the chemical hazards in order to know their mechanisms of action and minimise food contamination, if possible.

An important tool, which provides us with a fairly detailed overview of contamination of food chains, is the monitoring of contaminants. It is done through cooperation of the Ministry of Agriculture and the Ministry of Health. Thanks to this monitoring we have been for quite some time able to assess the development of contamination of food chains (some data are from 1990s). According to the monitoring of contaminants, the total chemical load through food has been decreasing. This positive trend is obvious. Annually, roughly 1% of food containing contaminants exceeding the maximum limits is detected.

Thanks to the monitoring of contaminants, we are aware of the situation in individual groups of chemical substances. The above-the-limit findings are isolated, but there are still many positive findings (i.e. situations when the laboratory analysis detected the level of substance which is measurable, but does not exceed the set maximum limits). It concerns mainly heavy metals, mycotoxins, nitrates or process contaminants (substances formed in food during processing). On the other hand, we do know that in the Czech Republic there are no serious problems with persistent organic pollutants or residues of veterinary medicines in food of animal origin. Overall, step by step, we achieve a certain minimum level, which will be very difficult to push further down due to technological reasons.

Contrary to other undesirable substances, different contaminants in food are monitored by individual EU Member States. The obtained data thus make it impossible to effectively compare the results. This is also a reason for which an implementing regulation of the EU is being drafted, which will lay down the rules for controls on contaminants in food (of animal origin and others) and set uniform minimum frequency of controls. Multi-annual national control plans on contaminants in food to be developed by the Member States pursuant to this regulation shall be first applied in 2023.

There are, however, areas where the load can be reduced. One of the most significant is represented by pesticide residues and their metabolites, which were in 2018 detected in approximately 75% of food samples. These substances are very strictly assessed prior to their authorisation and low maximum limits of residues are set in order to protect human health. Just like in other chemical substances questions arise regarding their mechanism of action: be it effects of low doses or cumulative effects of the so-called pesticide cocktails. It is therefore desirable to further reduce the number of positive samples with pesticide residues and their metabolites.

Similar situation prevails in many EU countries. That is why in 2009 already Directive No 2009/128/EC of the European Parliament and of the Council establishing a framework for Community action to achieve the sustainable use of pesticides was adopted. Based on this Directive, National Action Plans (NAPs) were adopted in all Member States for safe use of pesticides, i.e. a set of actions to reduce the adverse effects of plant protection products. One of the focus areas of the Czech NAP is the protection of human health against repercussions of consumption of food with above-the-limit content of residues and monitoring of food containing residues, the consumption of which could result in health risks.

The source of contamination in food can also be the packaging or other materials and articles coming into contact with food, from which chemical substances may be released. Similarly to other areas, the EU therefore adopted a robust legal framework aimed to ensure that not only packaging, but also other materials and articles that come into contact with food, including active and smart materials and articles, are produced in such a way that their components are not released into food in levels that could put human health at risk, cause an unacceptable change in food composition or cause deterioration of organoleptic food properties.

Food additives have a special position among chemical substances. These substances are not commonly consumed as food, but the producers add them in food intentionally for a specific technological purpose (e.g. colouring, extending shelf-life, improving consistence or better blending of individual components, etc.). In many cases, the particular foodstuff could not be produced without additives.

The use of additives is strictly regulated by EU laws and regulations. Only those additives can thus be used that have been authorised for use in foodstuffs, whereas inclusion of an additive in the list of authorised additives is always preceded by its safety assessment. As a part of the authorisation process, groups of foodstuffs are determined, in which the particular substance can be added, and also the maximum level of substance that can be used. For some additives, the highest permitted level is not quantified numerically. In food production, the principle of *quantum satis* is applied in such a case, i.e. only the lowest necessary level is used.

When used at the maximum permitted levels and in permitted food, food additives are safe. They are, however, substances, adding of which into foodstuffs should be minimised. This is also why their safety is continuously re-assessed and in case of any doubts their use is terminated. These matters are perceived by consumers as very sensitive and they press for minimising their use and replacing them with natural substances.

Microbial hazards are effectively reduced

Microorganisms are unicellular and multicellular organisms unable to form functionally differentiated tissues. They include bacteria, algae, yeasts, fungi, viruses. Their common feature is their very small dimensions. They require certain conditions for life such as temperature, acidity of the environment, water content and oxygen demand. By placing the foodstuffs in a refrigerator, we can extend the shelf life, by cooking we can ensure their safety, etc.

Microorganisms are ubiquitous and most of them do not pose a hazard to human health. Some of them, however, pose a risk and these very microorganisms cause the highest number of acute diseases that can be directly linked to food. A hazard to human health is posed by the so-called pathogenic microorganisms, which can cause diseases or poisoning.

Food-borne diseases and poisonings occur when consuming food and beverages infected with microorganisms. They can cause various communicable diseases and poisonings, the course and seriousness of which is affected by the type and amount of consumed microorganisms and individual response of the organism. Foodstuffs can be infected through primary or secondary contamination. In case of primary contamination, the microorganisms

are present already in raw materials or in water used for preparation of meals. Primary contamination is more often associated with food of animal origin, particularly meat (most often poultry meat) and eggs, which are contaminated by microorganisms from infected animals.

Secondary contamination occurs via the transfer of pathogens due to inappropriate handling of food during processing, storage and distribution. It is usually caused by the so-called cross-contamination, i.e. when clean and dirty zones are not separated (typically cutting of fresh vegetables on a cutting board, which was previously used to cut raw meat). Secondary contamination is much more frequent than primary contamination since it is mainly associated with improper food handling in home kitchens. This is, however, no more the responsibility of the food business operator, but rather the individual responsibility of consumers.

Therefore, it is the primary contamination, which is of greater importance in assuring food safety and which can be avoided or minimised already in the agricultural primary production, or in food production. That is why the legal framework and food management systems ensure that in a minimum number of cases only contaminated raw materials enter the food chain and that food contaminated with undesirable microorganisms does not reach the consumer. Especially in food that is not sold heat-treated (raw meat and meat products, eggs, milk sold through vending machines), it is impossible to fully guarantee that it is completely free from unwanted microorganisms, but their level shall be minimised and the presence of the most dangerous microorganisms shall be eliminated. Commission Regulation No 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs sets microbiological criteria for some microorganisms. A microbiological criterion means a criterion defining the acceptability of a product, a batch of foodstuffs or a process, based on the absence, presence or number of microorganisms, and/or on the quantity of their toxins/metabolites, per unit(s) of mass, volume, area or batch. If microorganisms are present on food surface or in food, if handled incorrectly, they can multiply up to the quantity that may cause an illness or poisoning.

Most frequently occurring are food-borne diseases caused by bacteria (campylobacters, salmonellas, E. coli, Listeria species, etc.) and viruses (e.g. hepatitis E virus infection, rotaviruses, caliciviruses). Number of documented cases are tens of thousands in the Czech Republic only.

Table 1: Number of foodborne infections per year (2018)

Campylobacteriosis	23780
Salmonellosis	11359
Viral intestinal infections	9694
Other bacterial intestinal infections	8116
Gastroenteritis susp. of infectious origin	2448
Enterobiosis	1085
Acute hepatitis E	272
Other bacterial food poisoning	237
Legionellosis	213
Hepatitis A	211
Shigellosis	145

Source: National Institute of Public Health

The source of contamination of food of animal origin by microorganisms can be humans or animals, from which food is obtained or with whom they are in contact, surrounding areas or the environment. Food of other than animal origin can naturally also be contaminated. Risk

factors, which can cause contamination of crops at different growth stages with pathogens in primary production, include e.g. climatic conditions (for instance heavy rains), use of untreated or inadequately treated manure or compost, use of water contaminated with wastewater, or contact with (domestic or wild) animals which are the disease vectors, contamination and cross-contamination caused by harvesting machines, equipment or persons handling food during and after harvest. As obvious from the above, human health is linked to animal health and the environment.

Of particular importance are pathogenic microorganisms transmissible from animals to humans via direct contact or food, water and environment, which have the biggest impact on public health, and related major socio-economic impacts. Prevention and regulation of animal diseases thus also mean prevention of human diseases and are considered to be one of the EU priorities. One Health approach is one of the pillars of the modern food safety system.

Sharing pathogens between animals and humans and the resulting close links between animal and human health is the source of one of the biggest hazards, which already now limits our ability to effectively fight with pathogens and will jeopardize it in the future. Growing resistance of microorganisms to antimicrobials has been caused mainly by overuse and misuse of antibiotics, especially in farm animal husbandry (antibiotics used as prophylaxis and growth support), and by improper procedures applied in managing infections in human and veterinary medicine. If no action is taken, microbial resistance may in 2050 globally claim up to 10 million deaths annually. Thus, one of the objectives of the One Health approach is to ensure that treatment of infections in humans and animals remains effective, to reduce the development and spread of antimicrobial resistance, and to encourage the development and availability of new effective antimicrobials, both inside and outside the EU.

Current data on food are available

The key input in assessing and evaluating food safety are the data, mainly the data on the presence of undesirable substances in food (naturally present in food, contaminants, residues) and also the data on food composition and consumption. These data are obtained by regular long-term monitoring (e.g. monitoring programmes of the Ministry of Health, Ministry of Agriculture and Ministry of the Environment), in special cases from research centres, but also, when certain conditions are met, as a part of routine control activities within the entire chain from primary production to food consumption. Unique role is played by the acquisition of data directly from consumer groups through epidemiological studies. The primary data are acquired by professional institutions from across the Czech Republic, state inspection bodies and higher-education institutions. In the Czech Republic, lots of these data are available to a limited extent only or are outdated. For instance, data on individual food consumption for the assessment of health risks were obtained in 2004, which limits their use today. But the acquisition, handling, use and sharing of data on food is an essential topic addressed by international cooperation. In line with the applicable legislation, in a number of cases the Czech Republic now shares data with the EU, namely by forwarding them to the European Commission and the European Food Safety Authority. At the European level, the systems of data collection and transfer are aligned to some extent only, which is why major attention is paid thereto.

Discussions held between the Member States within the EFSA working bodies address potential greater harmonisation and interconnection of data collection. The presented visions of an ideal future data collection system describe a common system following common rules ensuing from laws and regulations harmonised at the EU level. Such a system uses standardised models and state-of-the-art technologies. The speed of access to data is crucial. In the future, data should be captured in a digital format already at the place of their generation and transferred further in real time. A big challenge is to find the balance between data safety and confidentiality on the one hand and their interpretation on the other hand.

A discussion shall be launched in the Czech Republic on the applicability of these approaches to data collection and information technologies should be applied more intensively as a part of the food safety system. This is a challenge as well as an opportunity for data generating organisations allowing them to change their approach to data governance.

Attention is paid to new hazards

The ongoing COVID-19 pandemic underlines the importance of **monitoring the emerging hazards** and examining the risks they pose. The spread of pathogens is facilitated by trade globalisation and ease of travel, supported by changing climatic conditions, which enable their survival in colder areas. These do not have to be only new biological agents, but also for example chemical substances, which are considered safe at normal doses, but in much lower doses have an adverse effect on the human endocrine system. Ever more attention is also paid to microplastics, which are becoming a fairly common contaminant of just about everything, water inclusive. Currently, the effects of their consumption on human health are unclear and no obligation has been imposed on food producers to deal with microplastics.

Feedback from consumers is vital. Since 2015, the Centre for Health, Nutrition and Food of the National Institute of Public Health in Prague (NIPH) has been running the Nutrivigilance CZ system, which collects and analyses the data on adverse health effects (primarily of other than infectious origin) of selected types of food caused by their consumption. Through <http://nutrivigilance.szu.cz> web portal, the consumers can report their health problems associated with food consumption as well as find out from the reports available on the web portal whether their health problems may truly be caused by food. This system, however, needs to be innovated and interlinked with the systems in other EU Member States. At present, only small amounts of data are exchanged between some EU Member States, though on a regular basis. The Czech Republic is linked to the nutrivigilance system in France, where it is mandatory for health care professionals to report such incidents (note: pharmacovigilance is mandatory in the CR).

4.2. Priority area 2: Food safety system is functional and sustainable

Further development of the system while adhering to the risk analysis principles

Food safety system is based on risk analysis, which is a process consisting of three interconnected components: risk assessment, risk management and risk communication. Simultaneous development of all these three components is necessary.

Risk assessment means a scientifically based process, which aims to describe the risk in detail in order to be able to effectively control it. The process is composed of four steps: hazard identification, hazard characterisation, exposure assessment and risk characterisation. The risk analysis and assessment represent a highly specialised area. The risk assessment, more demanding in terms of quality and time, is carried out by the EFSA, an EU authority, through expert activities of its Scientific Panels. In the Czech Republic, these activities are performed at specialised professional workplaces or research centres. The Strategy aims to create appropriate conditions providing relevant expertise. It therefore does not address the particular cases, opinions or risk assessment methods.

Scientific advice, in the sector of agriculture, is provided through scientific committees composed of the leading Czech experts. The good news is that in 2016 their long-term financing was resolved. In the upcoming period, the major task to be addressed is first and foremost the retention of members of scientific committees. It is also necessary to intensify

the involvement of the CR organisations of food safety system in the activity of scientific committees with respect to the definition of their tasks and to increase the formal weight of their outputs. In the framework of the Ministry of Health, scientific and research activities are carried out by the National Institute of Public Health, an organisation directly managed by the Ministry, which also performs free of charge assessment of health risks commissioned by the Ministry of Agriculture or its directly managed inspection bodies (CAFIA and SVA).

In the Czech Republic, attention is paid mainly to **risk management**, which has a direct impact on the legal system, business environment and entities.

EU food-related laws and regulations are based on an integrated and comprehensive approach and cover all the steps in food and feed chain (“from farm to fork”): primary production, food processing, packaging, storage, transport and placing in the market. Apart from food safety requirements, they address also food labelling with a view to protect consumers, the vulnerable consumers in particular, and to guarantee their right to information so that they can make an informed decision on food they eat.

Official controls of food chain are performed by inspection bodies of the Ministry of Agriculture and the Ministry of Health. In general, food safety, quality and labelling (also in catering services) and also feed, animal health and welfare and plant health fall within the scope of authority of the MoA. The public health protection is under the responsibility of the MoH. Public Health Protection Bodies (PHPBS) perform comprehensive public health inspection in catering establishments. They identify potential causes of damage or risk to health across the food chain and prevent the spread of communicable diseases or other damage to health caused by food. The inspection of PHPBs also covers consumer protection and safety of articles and materials intended to come into contact with food.

The efficiency of official controls is enhanced by a regularly updated single multiannual national control plan of the Czech Republic, which has been drawn up in line with Article 146 of Regulation (EU) 2017/625 of the European Parliament and of the Council on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products.

Official laboratories are irreplaceable in verifying food safety and quality. In order to effectively accomplish their mission, they shall apply the state-of-the-art analytical methods in line with the current scientific findings, introduce new analytical methods essential to detect food alteration and control food safety. This also necessitates the provision of the top-notch laboratory equipment. Support shall be provided to these laboratories, with particular attention to be paid to the support of national reference laboratories.

Risk communication and sharing of information among entities is necessary for smooth functioning of the food safety system and in relation to the other stakeholders it is an important and serious task for all partners involved in food safety. Communication of information can assume the form of mere provision of information to the recipient of information and/or his education.

Commonly, individual organisations inform the public and mass media on the results of their activities through press releases, which are posted on their websites or on social networks. Frequent are also appearances in media and summaries of activities in the form of annual reports. Overall, an obvious departure from traditional media and especially from printed media and a shift to electronic media can be observed. Activities performed by specialised centres that collect and publish information are step by step complemented by automatic monitoring systems. They perform to a very high standard, but they are still unable to fully replace human labour, e.g. in accurate translations of highly specialised or legal texts. This indirectly confirms the relevance of projects such as the Food Safety Information Centre, which in the Czech Republic ensures communication with consumers in questions concerning food and food safety.

Education of interest groups in food safety and nutrition matters is a necessary part of activities of all participating ministries and partners from non-governmental non-profit organisations. Activities enhancing the public awareness of hygiene and food handling, healthy diet as a part of healthy lifestyle and prevention of chronic non-communicable diseases have been consistently promoted. Even though traditional forms of communication are still used and in many cases are irreplaceable (health promotion projects, printing of information leaflets, popular science lectures, articles in the press, etc.), the modern electronic educational tools (mobile applications, e-learning) are gaining ground.

In this context, the National Health Information Portal (NHIP) of the Ministry of Health of the Czech Republic has been created, which is accessible on www.nzip.cz. Its aim is to provide the laymen public with health information that are guaranteed by selected experts in the given field in the Czech Republic (Czech Medical Association of Jan Evangelista Purkyně, National Institute of Public Health, Ministry of Health, Institute of Health Information and Statistics of the Czech Republic). The NHIP provides verified and guaranteed information in the field of prevention and healthy lifestyle or e.g. information on diseases. Apart from articles, this portal offers also other recommended verified sources outside NHIP, which focus on these matters. In the Prevention and Lifestyle module, the consumer may find information on health promotion, physical activity, obesity, prevention of cardiovascular diseases, nutrition of patients, nutrition of healthy population, breastfeeding, environment and health, food packaging and health, and other topics.

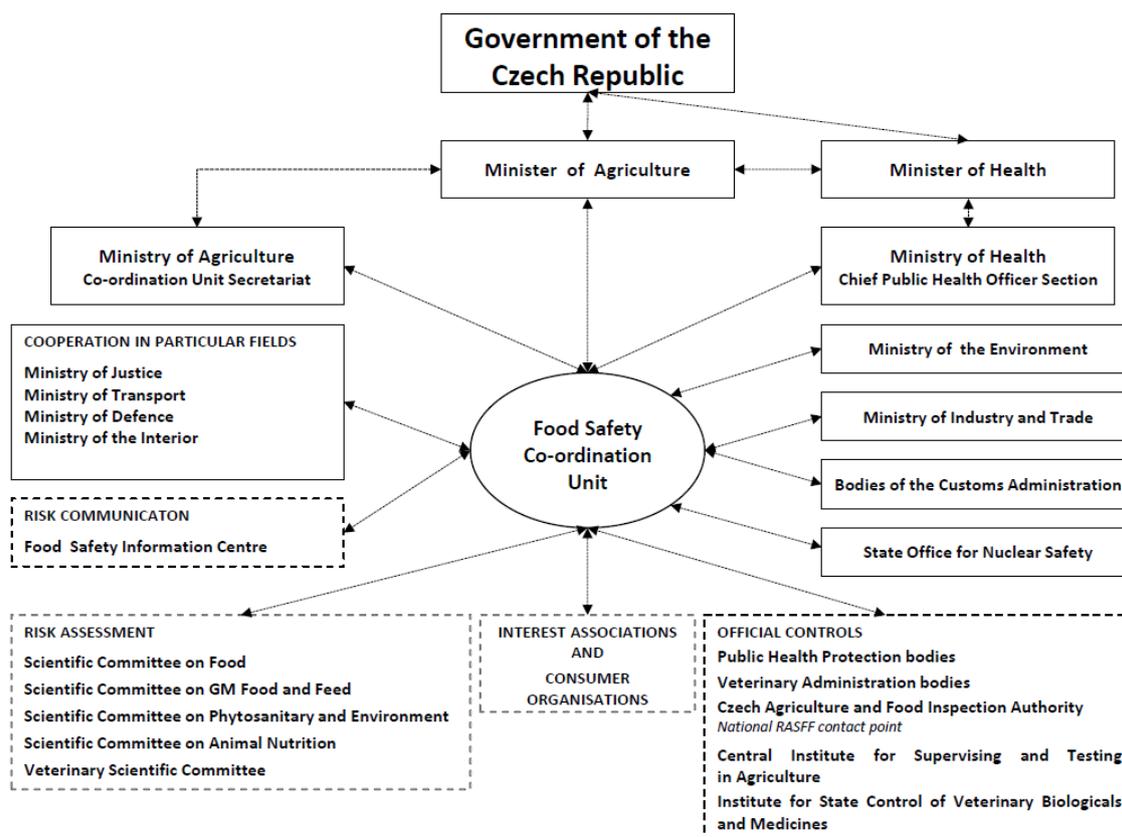
Effective inter-ministerial cooperation

Cooperation between all the relevant entities is a basic precondition for functioning of the food safety assurance system. Although the system in the Czech Republic is coordinated by the Ministry of Agriculture and the Ministry of Health, an important role is also played by other ministries and state administration organisations, non-governmental non-profit organisations, professional and consumer associations, scientific and research organisations, and academia.

Coordination of activities of all stakeholders from among governmental as well as non-governmental institutions within the defined powers has been entrusted to the inter-ministerial Food Safety Coordination Unit composed of the representatives of central state administration authorities, state inspection bodies, consumer and professional organisations.

The Coordination Unit is tasked to coordinate activities of individual ministries and to define food safety priorities, to boost cooperation with the national food safety institutions of the EU Member States and EFSA, and to ensure exchange of information among the stakeholders.

Fig. No 1: Scheme of food safety assurance system in the Czech Republic



In recent years, the Coordination Unit has proven its worth as a platform facilitating transparent discussion on current topics and making decisions, if requested to do so. It would be appropriate to strengthen its role in the upcoming period.

It is also necessary to encourage and develop cooperation with respect to individual specialised matters, especially those where the powers are divided among more ministries. An example of successful cooperation can be e.g. the activities performed by DATEX.CZ, focused on harmonising the collection of data on the presence of contaminants in food and their forwarding to EFSA. In the last decade, a functional model of cooperation between entities producing these data in the CR was established (NIPH, CAFIA, SVA, CISTA). Now, efforts should be exerted to ensure its sustainability.

Similar inter-ministerial cooperation has been established with respect to zoonoses, but in real life the situation is different. Currently, there is no single approach to data sharing in the CR and none of the components involved in the collection, analysis and evaluation of results of analyses that would have access to all the relevant data. In the framework of the One Health strategy, it is necessary to build effective cooperation and data sharing between human and veterinary health areas. The Ministry of Agriculture and the Ministry of Health should therefore seek to create a national centre for sharing and collection of data on zoonotic agents. This centre would share data and ensure a coordinated procedure in addressing food-borne diseases in people (including identification and keeping of isolates from food).

Adequate staffing capacities for functioning and development of the system

Risk assessment and risk management (and in near future also risk communication) are largely harmonised at the level of the European Union. Apart from common laws and regulations, prepared by the EU working bodies together with the representatives of the

Member States, the Czech Republic is also involved in activities of the EU agencies involved in matters of food safety, EFSA, ECHA, EMA, ECDC or JRC in particular.

A number of Czech experts have been working successfully with European Commission and its working bodies in the field of risk management. Their expertise is thus of benefit for the entire EU. There are not so many Czech experts in the EU agencies dealing with risk assessment, though. This reflects the situation in the CR, where just like in other EU Member States and also in EU agencies, the potential further cooperation is limited due to the lack of experts caused by the declining interest in science. In this area, the CR fully depends on the results of work of the relevant organisations of the other Member States and of the EU agencies.

Czech science and research centres and academic workplaces often face difficulties in terms of staffing and funding. The comparison of their participation in international food safety projects reveals that countries of comparable size are more actively engaged in international cooperation. A certain role might also be played by the absence of a tool that would make it possible to support projects of scientific cooperation in the field of risk assessment.

Conditions need to be created for Czech experts and specialised workplaces to get engaged much more.

4.3. Priority area 3: Educated consumer can make an informed choice

Timely communication of precise and verified information

Due to easily accessible information, consumers are overwhelmed by the amount of data. As to the information on food, just like on other things, their sources show different quality and motivation. Thus, the credibility of the source of information has become crucial. Trust in information provided by state institutions relies on the trust of a part of the public in state administration, with the public rightfully expecting that information provided by state organisations is true. In addition to this basic requirement, the data provided by state administration must be precise, timely and comprehensible, which places great demands on those who process and present the information.

In line with the Food Safety Strategy of the Czech Republic of 2002, the Food Safety Information Centre (FSIC) was set up as a joint project of the Ministry of Health and the Ministry of Agriculture. It was assigned the task to obtain and sort information, to ensure the information flow to the relevant institutions, to ensure vocational education of the professional as well as general public, and to promote educational events. These main areas of activities have not changed until now, when these activities are provided for by the Food Safety Department of the MoA. Due to rapid technological development in the last 20 years, the used tools and communications channels changed. The main communication tool of the FSIC are the websites www.bezpecnostpotravin.cz, which have been established as a reliable source of information on food and the news section of which has several thousands of regular subscribers from among consumers. The average website traffic in 2019 reached 202 thousand visits per month (Tab. 2). The FSIC also follows the latest trends and communicates via social networks (Twitter, Facebook).

Tab. 2: Development of average monthly traffic of www.bezpecnostpotravin.cz (2013-2019)

2013	2014	2015	2016	2017	2018	2019
36 000	50 000	59 000	113 000	168 000	153 000	202 000

Also the website www.potravinynapranyri.cz, launched in 2012 by the Czech Agriculture and Food Inspection Authority (CAFIA) in order to provide information on the results of official controls of food to consumers, has gained great popularity. Currently, it provides information on non-compliant batches of food and establishments closed by the CAFIA for grave breach

of hygiene regulations. They also warn the consumers against buying food on websites offering food in conflict with laws and regulations and inform on the results of control actions with a specific focus. In 2016, the project was joined by the State Veterinary Administration (SVA) and in the Food section information is now provided on non-compliant batches of food identified by the official controls of two inspection bodies – CAFIA and SVA.

The Public Health Protection Bodies inform on the results of the conducted state health inspection on their own website, social networks and in regional press in line with the applicable legislation. The reports indicate the deficiencies ascertained, the corrective measures imposed and the results of follow-up controls confirming the removal of deficiencies. Often times, the information is also shared on www.bezpecnostpotravin.cz.

Moreover, all the organisations involved in the food safety system in the Czech Republic naturally have their own website, through which they provide information on their activities and other information.

Educating laymen, deepening the knowledge of professionals

Education is the key element of the food safety system and nutrition for the future. It is apparent that consumers benefit from information on how to produce, select, use, prepare and store food. It allows them to protect themselves and their nearest and dearest. An integral part of consumer education shall be the transparent provision of unbiased and comprehensive information in complex areas such as the approach to scientific risk assessment, discussions on novel food and technologies used. This information shall be commonly incorporated in the processes of shaping the future food system.

In the rapidly changing world, continuous education is a common part of our lives. For staff of the state inspection bodies performing official controls, regular education is an obligation ensuing from the legislation. Repeated training of inspectors is a necessary prerequisite enabling them to fulfil their duties professionally and to perform official controls in a uniform way. Training courses are available at regional, national as well as international level, with a system of training courses organised by the European Commission – Better Training for Safer Food (BTSF).

Education of individual interest groups requires continuous communication of all entities in the system, state organisations, non-governmental non-profit as well as private organisations. It is the only way how to properly encourage the population to protect and promote their health. The state avails of no resources or possibilities to cater for all the aspects of health of the population. To educate population and encourage their own activity aimed at health at all stages of their life is necessary.

4.4. Priority area 4: Nutrition

Adherence to **healthy diet principles** is an essential precondition for maintaining good health and preventing the development of chronic inflammations that can lead to a number of chronic non-communicable diseases caused by inadequate dietary habits of individuals in population. They constitute one the biggest burden of the healthcare system and decrease the quality of life in the Czech Republic as against some other EU Member States.

Dangerous **eating habits** and tobacco substantially contribute to the mortality rate, which reaches 27% in the CR compared to the EU average of 18% (EC, 2017). Today, the overweight and obesity represent the greatest challenge faced by the public health. In the last 15 years they increased by more than 30%. The prevalence of obesity in adult population of the CR is around 20% as against around 15% in the EU; a half (56%) of the Czech adult population, however, has the weight higher than what is considered a normal weight. Contributing to such a high share of population with overweight are mostly men, followed by older people. In the age group 45 to 74 years, overweight is reported in roughly

80% of men. Overweight in women of this age group increases with age, with a half of women with overweight aged 45-49 years up to three quarters of women aged 65-74 years. In 2014, the Czech Republic reported obesity in 20% of men and 18% of women, whereas in 1993 it was “only” 12% of men and 10% of women. Overweight and obesity are also on an increase in children and adolescents (17.5% fifteen-year-olds). In boys it is the alarming 23%, in girls it is less, namely 12%. It is, however, a global trend - since 1975 the number of obese people globally has almost tripled. Just for the sake of comparison, in 2016 nearly 40% of adults suffered from overweight (39% of men and 40% of women) and 13% of people (11% of men and 15% of women) were obese. The Global Health Observatory Data Repository data indicate that in terms of obesity the Czech Republic ranks among the most obese nations worldwide. The relative share of obese inhabitants exceeds 25% and has significantly increased when compared to 2010 – 2014 period. The predictions made based on international comparisons anticipate further growth in obesity prevalence in the Czech population, namely up to 35% by 2030. Another issue, however, is malnutrition suffered by a part of the population and also numerous chronic non-communicable diseases. For instance, 44% of adults state the consumption of fewer than one piece of fruits per day and even less in vegetables. The daily salt intake in adult population in the CR is nearly 14–15 g/day, which is a dose exceeding the daily intake of salt recommended by the WHO. The available international comparisons of the WHO reveal that the Czech population ranks among approximately 5 countries with the highest salt intake measured.

Simultaneously, **physical activity decreases**. Physical activity plays an irreplaceable role, today considered even crucial, in preventing the onset and development of non-communicable diseases, the so-called lifestyle diseases. Together with healthy eating principles, they form basic prevention measures included in recommendations concerning healthy lifestyle, which is one of the determinants of health. Physical activity must be performed regularly and with necessary load on the cardiovascular system. In the Czech Republic, physical inactivity of a significant part of the population, obvious already in children of the youngest age group, i.e. pre-school children, is a real problem. Only 61% of adults state engaging in at least light-intensity physical activity each week. The EU average is 72%. Promoting physical activity belongs to the basic objectives of the strategic document Health 2020, followed by the Health 2030 strategy.

Consequences include inter alia other cardiovascular diseases, type 2 diabetes, hypertension, eating disorders in adolescents, tooth decay, osteoporosis or cancer and others. Overall, these diseases represent the leading cause of disease and death in the Czech Republic (similarly to the entire European region). At least 3 in 5 people die of these causes. As such they represent much greater social and thus especially economic challenge, compared to the food safety matters.

It is therefore in the interest of the state to provide **scientifically based** information to the population, food producers as well as processors in order to ensure adequate nutrition both in terms of quantity and quality. All that with account taken of culture, history and traditions, social as well as environmental and undoubtedly also economic factors (food production sustainability). Such information is usually provided in the form of dietary guidelines based not only on theoretical knowledge, but also on results of epidemiological studies. A constantly growing part of the population is concerned with environmentally-friendly food production, which protects our environment.

Dietary recommendations represent a broad area with multiple aspects. They cover three levels varying in scientific complexity and practical usability. The basis is constituted by numerical recommendations for individual nutrients, followed by general recommendations comprising summary information intended for the general public, and finally practical food-based dietary guidelines intended for individuals (for example in the form of food pyramid). These data complement each other and constitute the basic information for producers, processors and consumers.

Practical knowledge of the nutritional status and eating habits of population are necessary to achieve an optimal design of guidelines in the field of nutrition. Without the knowledge of **individual food consumption**, no health risk assessment can be done. Also necessary are of course the analytical data from the food control system, but also the updated tables of food's nutritional values. They must be available not only to experts, but also to the general public, which is a prerequisite for self-control of individuals. The nutrition facts labels on food packaging should be accompanied also by a simplified health assessment since the nutrition data are far too complicated for a large part of population. Introduction of uniform labelling in the EU is foreseen, which would provide prompt/indicative information on selection of "healthier" food, but the nature of labelling, whether voluntary or mandatory, will be subject to discussions in the future. The Czech Republic is in favour of voluntary system of labelling.

According to the WHO report of 2005, up to 80% of cardiovascular diseases and cases of type 2 diabetes and up to 40% of all cancers could be prevented by healthy eating habits, adequate physical activity and quitting smoking. The social and individual responsibility shall go hand in hand, i.e. a healthier lifestyle should be preferred. Under such created conditions, for an individual motivation, knowledge and affordability of the healthier lifestyle are a must. An emphasis must be placed on creating conditions, which enable an informed choice of food and healthy diet, and on nutritional education of population, and also on promoting healthy diet in vulnerable groups of population⁴ and specific needs of men and women.

⁴ WHO. Regional Office for Europe. European health for all database (HFA-DB) [on-line database]. Copenhagen, 2005. Accessible on <http://www.euro.who.int/hfadb>.

5. Strategy Implementation

5.1. Implementation structure and strategy implementation management system

The Strategy is designed as an open living document. Priorities, objectives and individual actions of the Strategy are set primarily under the relevant schemes and activities of the Agriculture and Food Industry Section of the Ministry of Agriculture and the Public Health Protection and Promotion Section of the Ministry of Health; in professional cooperation with other stakeholders and groups. The Strategy reflects the already existing schemes and plans and takes note of the strategic documents in particular areas and activities of cooperating organisations, or other projects and actions.

The Strategy is a document of the Government of the Czech Republic, the process of its introduction is managed by the Food Safety Department of the Ministry of Agriculture, in collaboration with the Ministry of Health.

5.2. Plan and timetable of implementation of activities

The implementation of the Strategy's objectives will be translated into a document (an Action Plan). It will describe in detail the specific objectives, responsibility for their implementation, indicators and deadlines for their fulfilment, including the quantifying of requested financial and material resources. The Action Plan aims at ensuring transparent and effective accomplishment of the Strategy and also its effective design and evaluation. Interventions in all the strategic areas of the food safety policy can be effectively implemented only in a functional institutional setting, including adequate funding.

Regular ongoing assessment of activities will serve the needs of evaluation of strategic objectives and priorities in the individual areas of the Strategy.

Timetable:

2019-2021: preparation of the Strategy

2021: preparation of the Action Plan;

2022-2030: fulfilment of the Action Plan, implementation of the plan, e.g. through Grant agencies, projects, tasks assigned to organisations;

2025: an interim evaluation of the fulfilment of the Strategy is to be submitted;

2030: a follow-up strategic document will be submitted by the end of the year.

5.3. Budget and sources of funding

The Strategy implementation will result in the operating costs incurred by the organisations involved. They will be covered from the budgets of these organisations or from the state budget, where possible. The Strategy will be implemented through the Action Plan that will be subject to an approval process. The Action Plan defines requirements for adequate funds needed for the accomplishment of particular tasks.

5.4. Monitoring system and evaluation of the Strategy implementation

The coordination of implementation of the Food Safety and Nutrition Strategy 2030, regular monitoring of its fulfilment and final evaluation is the responsibility of the Ministry of Agriculture and the Ministry of Health.

The Food Safety Department of the MoA is the executive body in charge of everyday coordination of the Strategy implementation and its evaluation. The responsibility for the accomplishment of tasks is born by the Food Safety Department of the MoA and other

institutions/organisations defined under particular activities, by the deadline set for each activity (unless stipulated otherwise). The fulfilment of the Strategy will be supervised by the Food Safety Coordination Unit, composed of the representatives of all the relevant food safety entities in the CR.

The interim evaluation of the Strategy fulfilment will be carried out halfway through the monitored period.

6. Strategy Development Process

By Resolution of the Government No 25 of 8 January 2014 on the proposed Food Safety and Nutrition Strategy 2014-2020, the Minister of Agriculture and the Minister of Health were tasked to submit a follow-up strategic material by 31. 12. 2020. Concurrently, on 8 January 2014, the Government took note of the document Health 2020 – National Strategy for Health Protection and Promotion and Disease Prevention, in which nutrition and also food safety are considered to be priorities of public health protection.

The formal commencement of preparations of topics for the new strategic document was the submission of the “Information on fulfilling the Food Safety and Nutrition Strategy 2014–2020” to the Government of the Czech Republic in December 2017.

The Food Safety and Nutrition Strategy 2030 has been drafted the Food Safety Department of the MoA since the second half of 2019. At the 37th meeting of the Coordination Unit held on 21. 10. 2019, the members were asked to identify topics to be included in the Strategy and to define the objectives and actions.

In the period March – May 2020, the analytical part of the Strategy preparation was conducted.

In December 2020, the proposal for the Strategy was submitted for comments to the members of the Coordination Unit.

After the approval by the MoA and MoH, the Strategy was submitted to the Government of the Czech Republic for approval and it was approved on 29 March 2021.

7. Strategy Development Team

Ministry of Agriculture

Ministry of Health

National Institute of Public Health in Prague, Centre for Health, Nutrition and Food in Brno

The main coordination body is the inter-ministerial Food Safety Coordination Unit, the members of which participated in drafting the wording of the Strategy and reviews of the proposed wording.

8. List of Abbreviations

BSE	bovine spongiform encephalopathy
BTSF	Better Training for Safer Food – EC training initiative
CR	Czech Republic
DG SANTE	European Commission Directorate-General for Health and Food Safety
DRV	Dietary Reference Values (recommendations of nutrient intake)
ECDC	European Centre for Disease Prevention and Control
EFSA	European Food Safety Authority
ECHA	European Chemicals Agency
EMA	European Medicines Agency
EC	European Commission
EP	European Parliament
EC	European Community
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCM	Food Contact Materials – articles and materials intended to come into contact with food
GMO	Genetically Modified Organism
GDC	General Directorate of Customs
FSIC	Food Safety Information Centre
JRC	Joint Research Centre of the EC
FSCU	Food Safety Coordination Unit
MoIT	Ministry of Industry and Trade
MoEYS	Ministry of Education, Youth and Sports
MoH	Ministry of Health
MoA	Ministry of Agriculture
MoE	Ministry of the Environment
NHIP	National Health Information Portal (NZIP)
PHPBs	Public Health Protection Bodies
RASFF	Rapid Alert System for Food and Feed
IFCS	Individual Food Consumption Study
SVA	State Veterinary Administration
CAFIA	Czech Agriculture and Food Inspection Authority
NIPH	National Institute of Public Health
WHO	World Health Organisation
CISTA	Central Institute for Supervising and Testing in Agriculture
IAEI	Institute of Agricultural Economics and Information