

# THE FOOD SECURITY IN CONDITIONS OF THE SLOVAK REPUBLIC\*

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## Abstract

The main aim of this paper is to explore the current state of the food security in the Slovak Republic with using the Global Food Security Index. The first part of paper is focused on a brief description of the food security and its measurements which are used over the world. Next part describes the content of selected measurement of food security at national level – the Global Food Security Index. Current state of the food security of the Slovak Republic is analyzed in the 3<sup>rd</sup> chapter. Based on the data from Global Food Security Index, that current state of food security in Slovakia is ranked at an average level in comparison of others examined countries.

**Key words:** food security, food security measurements, global food security index, quality of life

**JEL Code:** O15, Q01, Q18

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## Introduction

There exist a lot of studies which examine a food security in countries around the world. Many of them are mostly focused on countries with high rates of poverty and human disease or difficult economic and social conditions of its inhabitants which also influence their quality of life. This includes e.g. some African countries, India, Bangladesh, Pakistan, Malaysia etc. Examination of food security in these countries is a logical step for organization and other countries which are willing to help them or just obtain more information for next research. An interesting object of investigation in field of food security may be developed countries which have passed of regime changes or import many raw materials and products from other neighboring countries. Typical example of that country could be the Slovak Republic which is still perceived as post-communist country and its level of import is slightly increasing every year.

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Due to these facts, the main aim of this paper is to explore a current state of food security in the Slovak Republic according to the Global Food Security Index. Through the analysis of individual components of the index – affordability, availability, quality & safety, in conditions of Slovakia, results can uncover critical areas that government should be focused on in the case of future increasing of the food security in country.

## **1 Food security and its measurements**

The concept of food security was first used and defined by experts in the 70s of the 20<sup>th</sup> century as the ability of the country to provide its residents enough nutritious food necessary for their health and productive lives. Pinstrup-Andersen, P. (2009) in his paper examine the significance of the word “enough” of above definition. He points out that “enough” can mean for each country something different in relation to demand of inhabitants and pricing policy of the country. Therefore, the problem with measurability of food security may arise very easy.

Due to the economic and climate changes arose up a need to modify the term “food security”. In 1996 at the World Summit on Food Security, the Food and Agriculture Organization (FAO) stated that food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Declaration of the World Summit on Food Security, 2009). Despite the content expansion of the term “food security” has appeared a similar problem with its measurability. Measurement of food security for the country as a whole according to economic, environmental or demographic data can be considered sufficiently reliable. However, the measurement process does not look at two important factors: the existence of regional disparities and individual preferences of consumers. Each country has regions which are richer and more developed than others which are usually faced with problems as poverty, the high unemployment rate or lack of the retailers offer nutrition food. In addition, preferences of final consumers may be different under the same conditions. Based on these reasons may be complicated to measure food security on national or regional level.

### **1.1 Environment and food security**

Every country in the world has its own specifics whether it's geographical location, availability of natural resources or economic stability. A new worldwide trend is the interest

of consumers for food produced by own country. The environment and use of available natural resources have a significant role in food security.

Growing demand for food produced in the home country creates a pressure to increase an environmental care. Healthy and nutrition food from health environment affect the overall quality of individuals. Therefore, a relationship between quality of life and the environment may be an interesting object of examination. Hajduová, Z., Andrejovský, P., Beslerová, S. (2014) describe in their recent study an interrelation between quality of life and the environment. Based on their own analysis built on a comparison of selected indicators (Human Development Index, Environmental Performance Index and Corruption Perception Index) on a sample of 10 countries come to the conclusion that there exist a relationship among above indices and thus the quality of life and the environment.

For ensuring an enough healthy, nutrition and high-quality food for residents not only from domestic production, is necessary to regard on elimination of negative impacts on the environment. Therefore, it is necessary to pay attention not only for food but also for environmental security. Poppy, G. M., Jepson, P. C., Pickett, J. A. and Birkett, M. A. (2014), examine in their paper the issue of environmental security and they highlight its importance in relation with food security.

## **1.2 Global Food Crisis**

The phenomena of globalization brought for countries not only positive effects as interconnection of economics or benefits accruing from foreign trade, but mainly negative effects. The largest and most destructive negative aspect is undoubtedly economic and financial crisis which affected almost the whole world. Bankruptcies of banks, companies, rising unemployment rate or state debt affect every country for several years. However, economic problems are closely linked with pricing policy.

Due to the crisis, disparities among social classes have a growing trend and it is obvious that there exists a new phenomenon of disappearance of the middle-class in the individual countries. High prices of food and limited budget of consumers affected changes in their buy behavior. Due to the increase in prices of food basket, in several countries, households were forced to reduce quality and quantity of food consumed (Brinkman, H.J., de Pee, S., Sanogo, I., Subran, L.,2010).

Increasing consumer demand, economic growth and uneconomic usage of the natural resources lead to lack of food for the entire population of the planet and we can talk about food crisis. Cribbs, J. (2010) presents in his publication how the food system interacts with

the environment and social factors and how powerful impact has high food prices to society. Also, he offers a few examples how the society can do to avoid an ongoing food crisis.

### **1.3 Measurements**

Food security is measure at three levels of aggregation: national, regional and household or individual (Babu, S.C., Gajanan, S.N., Sanyal, P., 2014). The measurement is usually performed by various indicators which help to quantify the research area. There exist a various approaches to collect and document data on food security indicators. According to FAO, the food security indicators are focused on three areas: food availability, food access and food utilization.

The current food security measurement has been expanded in last century, but there exists a significant dissatisfaction with existing measurement systems, especially because of the ongoing food and economic crisis (Headey, D., Ecker, O., 2013). Based on these facts, it was necessary to modify an approach to measuring food security. Headey, D., Ecker, O. (2013) set out a list of criteria of ideal food security measurement system. They used the benchmarking of four selected indicators (calories, poverty, dietary diversity and subjective indicators) than identified their relative strengths and weaknesses and finally compared overall performance. Their results can be used to create a new measurement of food security regarding to the current state of food and economic situation of countries.

The most widespread type of examination of the food security is investigation at the level of household or individual food security. The issue of the household food security in the USA and other industrialized countries was examined by e.g. Radimer, KL (2002). For the purpose of this paper, the next part is focused on the Global Food Security Index that represents an examination at the national level.

## **2 Global Food Security Index**

The Global Food Security Index (GFSI) is one of the indices which were created by The Economist Intelligence Unit in 2012. This index was developed based on the FAO definition of food security by couple of experts from universities, government sector and non-profit organizations. The main aim of the index is to bring real-time information on the state of food security in selected countries. GFSI provides necessary information about food security not only for researchers, organizations, investors or other countries but also for government of particular country. The results may help to further determination of food or pricing policy.

This index consists of 28 indicators which are focused on affordability, availability and quality of food in 109 selected countries. For simplicity of calculation, these indicators were grouped to the next three dimensions – Affordability, Availability, Quality and Safety.

## **2.1 Affordability**

When we are talking about affordability we mean the price ability of food which consumers buy to satisfy their basic human needs in normal circumstances (e.g. state of the country without war, natural disasters etc.). It is measured across follow six indicators:

- Food consumption as a share of household expenditure
- Proportion of population under global poverty line
- Gross domestic product per capita
- Agricultural import tariffs
- Presence of food safety net programs
- Access to financing for farmers

Data about affordability is obtained from national, regional or sub-regional statistics especially from food balance sheets and from world institutions as WTO, World Bank or Eurostat.

## **2.2 Availability**

This dimension is focused on the ability of the country to ensure an access to food for inhabitants. Except of areas as agricultural production, supply or corruption it examines how structural aspects determine the capacity within a country to produce and distribute food and how big is an availability risk (EU GFSI-2014 Findings & Methodology, 2014). Availability is measured by eight indicators:

- Sufficiency of supply
- Public expenditure on agricultural research and development
- Agricultural infrastructure
- Volatility of agricultural production
- Political stability risk
- Corruption
- Urban absorption capacity
- Food loss

Data are collected from FAO, OECD, World Bank, Eurostat and other institutions examine food availability.

### **2.3 Quality and Safety**

This indicator is focused on variety and nutritional quality of average diets and the safety of food within each country. The content of this indicator is related with utilization of food and it is measured across five indicators:

- Diet diversification
- Nutritional standards
- Micronutrient availability
- Protein quality
- Food safety

Data are collected from the same institutions as in the first two indicators. The concept of quality is studied in various fields and its relevance and importance has an increasing trend.

## **3 The Slovak Republic and food security**

The Slovak Republic is situated at the heart of the Central Europe and from 2004 is one of the 28 member states of the European Union. One of the specific sing of this country is especially its history. Slovakia is one of several countries whose development has been affected by communist regime. The country was a part of the Austro-Hungarian Monarchy and the common state of Czechoslovakia for a long period. Since 1993, when Slovakia became an independent, the economic conditions of the country have significantly changed. The economic orientation turned and the agricultural country has become the engine of automobile production across the European Union.

This state has also an impact on the foreign trade. The relevant evidence of this change describes Tab.1. Since 2004, when Slovakia has become a member state of European Union, the government used the benefits of membership. The possibility of importing a new materials, products and services helped the country to accelerate economic growth. Thanks to the advantageous geographical location, business conditions and cheap labor, Slovakia became an interesting country for foreign investors. The majority of investors who established in Slovakia are from automotive industry which belongs to the most developed industries in the country. In the past 8 years, the export and import have changed almost in 100% in both cases that may be caused by economic orientation of the country.

**Tab. 1 Export and import in the Slovak Republic (2004 - 2012)**

<b>Export</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>In mil. EUR</b>	29 573	32 864	40 892	47 351	49 522	39 721	48 272	56 783	62 144
<b>Import</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>In mil. EUR</b>	31 218	35 320	43 454	48 076	50 280	38 775	47 494	55 767	58 588

Source: Own processing of the Statistical Report of Foreign Trade in Slovakia 2004-2014 (2014)

According to research agencies in Slovakia, the interest of Slovak consumers on domestic products increased recent years. The main problem of satisfying this market requirement is the lack of domestic producers, restrictive legal conditions or high prices of these products. However, in the case of improvement these conditions there is still another problem – a communication among retailers and consumers. Creating of places for home food within retailers and providing enough information to consumers is a big restriction for selling domestic products. Retail management and sell promotion of domestic products in Slovakia are main objects in the research of Lieskovská et al. (2012).

### **3.1 Food security in Slovakia**

As was mentioned before, for purpose of this paper the examination of food security in Slovakia is provided with using the Global Food Security Index indicators<sup>2</sup>. According the data available on GFSI website the Slovak Republic is ranked on 31<sup>st</sup> place from all examined countries.

From the perspective of food affordability the country is ranked on 29<sup>th</sup> place. Based on the knowledge of the content of this dimension, the strongest indicator is a Presence of food safety net programs and the weakest indicator is a Gross domestic product per capita. The Presence of food safety net programs measures of public initiatives to protect the poor people from food-related shocks. Tab.2 shows there is a +35.3% difference from average. The Gross domestic product per capita is a long-term problem of the country and it is obvious from Tab.2 the indicator score achieved just 38 points from 100.

<sup>2</sup> The main aim of this exploration is just to find out the current level of food security in Slovakia not its development.

**Tab. 2 Food affordability in the Slovak Republic (2014)**

Indicator	A	B	C	D	E	F
Indicator score	83,6	99,9	38	81,7	100	75
% difference from average	+26,3	+28,9	+14,9	+4,2	+35,3	+16,3

Source: Own processing of Global Food Security Index for Slovakia (2014)

**Legend:**

A – Food consumption as a share of household expenditure

B – Proportion of population under global poverty line

C – Gross domestic product per capita

D – Agricultural import tariffs

E – Presence of food safety net programs

F – Access to financing for farmers

From point of food availability the country is ranked on 39<sup>th</sup> place. In this area, the strongest indicator is Food loss measuring total waste which was made by inhabitants and two weakest indicators – Volatility of agricultural production and Agricultural infrastructure. Both indicators clearly point to the above mentioned problems in agriculture and increased import policy within the foreign trade.

**Tab. 3 Food availability in the Slovak Republic (2014)**

Indicator	A	B	C	D	E	F	G	H
Indicator score	69,3	37,5	50,9	49	77,8	50	65,5	88,9
% difference from average	+10,3	+22,6	-3,3	-23,7	+28,5	+16,1	+2,3	+13,1

Source: Own processing of Global Food Security Index for Slovakia (2014)

**Legend:**

A – Sufficiency of supply

B – Public expenditure on agricultural R&D

C – Agricultural infrastructure

D – Volatility of agricultural production

E – Political stability risk



F – Corruption

G – Urban absorption capacity

H – Food loss

Last dimension of food security is food quality & safety. In this area, Slovakia is ranked 38<sup>th</sup> place. Deep insight at the individual indicators the strongest are Food safety and Nutritional standards which achieves 100 points. On the other hand the weakest indicator in this category is Protein quality.

**Tab. 4 Food quality and safety in the Slovak Republic (2014)**

Indicators	A	B	C	D	E
Indicator score	78,6	100	46,8	44,4	100
% difference from average	+22,9	+11,7	+3,2	+0,4	+20,7

Source: Own processing of Global Food Security Index for Slovakia (2014)

**Legend:**

A – Diet diversification

B – Nutritional standards

C – Micronutrient availability

D – Protein quality

E – Food safety

**Conclusion**

Based on these results it is obvious that the food security in Slovakia is at the average level. The most critical area is significantly agriculture which is very important for food availability and security. Sufficient support from the government could help develop this area and its effective using in the future. The positive effects of this support can lead to the better state of the GDP and whole economic stability. For the future growth, Slovakia could focus on the sustainability of its environment which can lead to improve whole quality of life.

At the national level, this survey confirms the critical areas of the country. However, there is a place for further examination of food security at the regional or household level. Due to the large regional disparities the results can be different. Slovakia is still in the development process in many areas. Therefore, there is a good opportunity for researchers to investigate more about the country social and economic background.

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