



Social Aspect of Sustainable Development: Issues of Poverty and Food Shortage

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ABSTRACT

Social aspect in the context of Sustainable development became more important, when it was realized that the level of poverty in the world is not decreasing. There is a need to investigate poverty conception as a separate element. It is important to understand the transformation road of poverty concept from original thought – lack of income for fulfilling basic physical needs, to the emphasizing on needs of individuals and life quality. Poverty is a multifaceted phenomenon, which can be caused by a variety of different reasons; it is also constantly changing, depending on how the countries and their societies are developing. Persons living in poverty are at the group of risk; individuals are more vulnerable, often have more frequent health problems, their resources and quality of life are generally lower than the national average. *Object* – social dimension of sustainable development. *The aim* – to analyze the shift of sustainable development and poverty concepts, and to analyze different problematic aspects of poverty and food shortage. Selection of scientific sources used, analysis, methods of generalization of information, selection of statistical data, processing both quantitative and qualitative methods, classification of data. Social aspect in the context of Sustainable development became more important, when it was realized that the level of poverty in the world is not decreasing. There is a need to investigate poverty conception as a separate element. It is important to understand the transformation road of poverty concept from original thought – lack of income for fulfilling basic physical needs, to the emphasizing on needs of individuals and life quality. Poverty is a multifaceted phenomenon, which can be caused by a variety of different reasons; it is also constantly changing, depending on how the countries and their societies are developing. Persons living in poverty are at the group of risk; individuals are more vulnerable, often have more frequent health problems, their resources and quality of life are generally lower than the national average.

INTRODUCTION

The relevance of the topic. Sustainable development is the global development strategy of the entire mankind. Civilization is facing great global problems in the environmental, social and economic fields. Differences between regions, between the developed and underdeveloped countries, are escalating. Current events of the world, the economic crisis and the consequences of natural disasters have resulted in the scarcity of the resources that would enable balanced and sustainable nourishment of the entire humankind and prevent severe poverty. This is particularly significant because, based on the projections by the UN, the current population will increase by a billion over the next 12 years, and in 2050 it will reach 9.6 billion. The principal growth is expected to occur in the developing countries, half of which are in the African region. Even though the number of children born in countries such as India, China, or Brazil has decreased, it is anticipated, for instance, that the population will continue to rapidly grow in Nigeria, Ethiopia, Uganda, and Afghanistan, where it is common for families to have 5 children (UN, 2013). The UN report also highlights the European region and claims that the population of the continent will fall by 14 percent over the next decades and the issues of an aging population that are evident already will only worsen. Thus, it can be predicted that the impoverished elderly population will rise.

The World Food Summit organized by the Food and Agriculture Organization (FAO) in 1996 set the goal to halve the population suffering from food shortages. Later, in 2000, this aim was also included in the Millennium Development Goals. It was emphasised in the Rio+20 summit that the main goals of sustainable development are reduction of poverty, replacement of unsustainable consumption and production models with the sustainable ones, and the protection and management of natural resources balanced with economic and social development (FAO, 2012). This vision, which was presented in the summit, cannot be implemented before the issue of food shortage is solved.

Taking into account the extent of various health issues, the World Food Programme (WFP) claims that hunger and malnutrition is a much greater threat than AIDS, malaria and tuberculosis combined. However, the problem of hunger is easier to solve than difficult illnesses and the threat of their outbreak. The world has enough food to feed all who suffer from hunger (Gilbert, 2004). Unfortunately, this requires the appropriate political decisions, the balancing of the extraction and production of food resources, and the adjustment of the society's food consumption habits.

According to R. Conger and M. Donnellan (2007), sustainable human development can be influenced by every separate element of the socio-economic status. Taking into consideration the fact that the assurance of the necessary amount of nutrients is one of the main conditions for the support of human life and health, it is possible to analyse in detail why families are incapable of providing a sufficient amount of food for themselves.

The object of the research is the issues of poverty and food shortage.

The goal of the research is to research the issues of poverty and food shortage in the context of sustainable development.

The tasks of the research:

- To analyse the assessment of the progress of sustainable development using indicators.
- To examine the understanding, causes, and concepts of poverty.

To analyse problematic aspects of food shortage.

1. ASSESSMENT OF SUSTAINABLE DEVELOPMENT PROGRESS USING INDICATORS

The importance and character of the indicators was the subject of much debate in the late 20th century. The tackled issues included the selection of indicators and the setting of goals with the knowledge that sustainable development does not have the ultimate goal and is a permanent process. P. Hardi and T. Zdan (1997) emphasised that *“indicators are the main tool of the assessment of the efficiency of sustainable development strategies. They can be quantitative and qualitative. They have to ensure accurate and reliable information on environmental changes, social and economic conditions, and a response to the goals of the strategies. Assessment indicators should determine the trends and changes, to measure the progress and determine potential future development”* (Lyytimaki, 2012).

Harger and Mayer (1996) distinguished the characteristics that the indicators chosen for assessment should have ideally: *“simplicity, wide applicability, quantitative expression, they can be used to formulate trends, sensitive to changes, make it possible to observe a change in a specific period”* (Ness, Urbel-Piirsalu, Anderberg and Olsson, 2007).

According to J. Lyytimaki (2012), indicators and more complicated indexes are a tool that is traditionally used in order to objectively measure the progress made towards the pursued objectives. He also notes that such a method has a drawback – subjectivity and the broadness/vagueness of the sustainable development strategy goals.

Nevertheless, the necessity of the indicators is indisputable. When integrating strategies at European level and defining the pursued goals, methods are required that could determine whether a change has indeed been achieved. Indicators can also indicate problems in certain areas and give hints that significant effort in one or another field and, perhaps, a transformation of certain established goals are required. On the other hand, indicators are important not only in order to evaluate the goals established in the strategy and the made progress, but also to formulate the strategy itself.

Selection of a unified sustainable development assessment system for one region is a complicated challenge, primarily because the member states and the candidate states are very different. The region contains both some of the richest countries in the world as well as very poor ones. Another problem is the infrastructure of government institutions, the shortage of capabilities, insufficient experience in environmental areas etc.

In order to select the appropriate measurement indicators, it is necessary to analyse the sustainable development strategy and to find the links between the goals and the expressions that would make it possible to observe the changes being made (Streimikienė, Mikalauskiene and Barauskaite-Jakubauskiene, 2011). The indications should be clearly understandable not only to specialists but also to other members of society, because a specifically named change motivates individuals more than abstract theses.

Many scientists and organizations of various fields have proposed collections of sustainable development indicators. They are constantly reviewed and updated whenever necessary and in the interests of efficiency. Some countries manage the sustainable development indicators by using small collections of indicators, e.g. France uses 12, Germany 28, while other countries, such as Denmark, Italy, or Switzerland, use collections of indicators containing over 100 components. On the other hand, large collections of indicators may raise difficulties in the communication of general results and trends of sustainable development achievements. Some EU member states use integrated indicators, such as the human development index (HDI) or the concept of ecological footprint, for evaluation.

There are many means and methods to evaluate sustainable development. Ness, Urbel-Piirsalu, Anderberg, and Olsson (2007) proposed a classification of assessment methodologies into groups: rates and indicators, and measures of sustainability assessment at the levels of product projects and nationally.

The majority of research related to sustainable development in the EU region is based on the data in the Eurostat database. The indicators in the database were chosen after analysing the plans of regional strategy and comparing them with the indicators mentioned in the national strategy documents. Additionally, qualitative content analysis of other documents that are significant to the field was conducted.

As R. Steurer and M. Hametner (2010) proposed, the sustainable development indicators determined by the EU were compared with the national indicators and a point of reference was defined which makes it possible to compare the data and observe the changes of trends. The indicators are also classified according to importance into the top and high priority ones and the main questions. A hierarchical system is created in this way (Ibid.). Often the statistical data of the European region is classified according to sub-regions: Eastern, Western, Central, and Northern Europe. The headline indicators of sustainable development specified in the EUROSTAT database are presented in Table 1.

Table 1. The headline indicators of the EU Sustainable Development Strategy

<i>Theme</i>	<i>Headline indicator</i>
Socio-economic development	GDP per-capita growth rate.
Sustainable consumption and production	Resource productivity.
Social inclusion	Proportion of people at risk of poverty and social exclusion (percentage of entire population).
Demographic changes	Employment rate of older workers.
Public health	Likely life expectancy.
Climate change and energy	Greenhouse gas emissions. Share of renewable energy in gross final energy consumption. Primary energy consumption.
Sustainable transport	Energy consumption of transport relative to GDP.
Natural resources	Common bird index. Fishing yields outside the determined permitted biological norms.
Global partnership	Official development assistance as share of gross national income.
Good governance.	-

Source: EUROSTAT. Sustainable development Indicators, 2013.

The indicators presented in Table 1 are identified as the headline ones because their purpose is to demonstrate the general progress made by the European Union's member states. There are over a 100 of indicators in the statistical database that can be used in a more thorough data analysis.

In accordance with the Lithuanian National Strategy for Sustainable Development, a list of indicators was prepared in which 27 separate indicators were created for the measuring of social field. The data for these indicators is provided by various institutions in Lithuania, such as the Police Department, Centre for Communicable Diseases, Ministry of Education and Science, State Centre for Environmental Health, and Statistics Lithuania. The latter institution presented the Report on Sustainable Development Indicators, in which headline indicators were selected to define the social status in Lithuania (Table 2).

Table 2. Sustainable development indicators presented by Statistics Lithuania

<i>Element of the social aspect</i>	<i>Indicator</i>
Population and demographic trends	<ul style="list-style-type: none"> • Population density in municipalities; • Population by main age groups.
Likely average life expectancy	<ul style="list-style-type: none"> • Likely average life expectancy; • Likely average life expectancy of a healthy person.
Mortality, causes of death	<ul style="list-style-type: none"> • Mortality by causes of death.
Employment of residents	<ul style="list-style-type: none"> • Involvement of population.
Unemployment	<ul style="list-style-type: none"> • Population unemployment rate; • Unemployment rate in districts.
Poverty and social exclusion	<ul style="list-style-type: none"> • At-risk-of-poverty rate.
Education	<ul style="list-style-type: none"> • Learning inclusion rate; • Lifelong learning rate of population aged 25-64.

Source: Sustainable development indicators, Statistics Lithuania, 2010.

Statistics Lithuania indicates that the aspiration of the social field is for the entire population of the country to have the conditions to earn and thus support the adequate standard of living and quality of life. The indicators specified in Table 2 can help determine whether the goal has been achieved and can single out the problematic elements of the country's social elements as well as the geographic regions where the difficult situation is the most pronounced.

Evidently, the most appropriate statistical indicators for the evaluation of progress are in most cases quantitative. They should have the following characteristics: wide applicability, simplicity, comprehensibility, objectivity, and possibility of measuring in various intervals. Because of these features, indicators have an important role in the field of educating the public as it makes it possible to more precisely explain to the public the processes of sustainable development. The indicators enable one to determine a point of reference and observe the change patterns. This avoids long descriptions and textual analyses and the data is typically presented visually, for the convenience, clarity and possibility to interpret it more easily. There are many dozens and hundreds of indicators dedicated to the description of sustainable development. However, for the sake of convenience, they are grouped into collections which provide a clearer structure. The EU stands out as the leading region in the structure of sustainable development evaluation. This is primarily because the national sustainable development strategies and indicators of the member states are coordinated with the regional indicators, thus ensuring the possibility to evaluate the progress and compare the countries.

2. UNDERSTANDING, CAUSES, AND CONCEPTS OF POVERTY

Development of the understanding of poverty. There is no unequivocal concept of poverty in the contemporary global world. Even though the world agrees that we have to aim to diminish poverty, it is difficult to attain a uniform definition of the term. Poverty may depend on various factors, such as the standards of living in a specific country, which are regarded differently in different countries.

Examinations of poverty as a phenomenon first emerged in the late 18th century. English economist A. Smith defined poverty in 1776 as missing “*not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without*” (Townsend, 1962). This defini-

tion is a clear reflection of Adam Smith's economist mindset. The emphasis is also placed on the fact that the poverty standards are determined in accordance with the standards present in society. This idea results in further extensions of the terms and the arguments that, perhaps, uniform understanding of poverty in the entire world would not be favourable as the societies, as well as their deepest social problems, differ.

Over a hundred years later, Alfred Marshal explored the field of poverty in 1890 and stated that the differences of climate and customs in various countries determine that a certain object is necessary in one country and completely unessential in another. However, each country has a specific threshold for the income which is necessary in order to support the existence of an individual in a society (Townsend, 2010). This definition of the concept mentions a new aspect, which had not been mentioned by researchers before, that poverty may be determined by the country's geographic status, climate conditions, and cultural features.

Another English scientist, B. S. Rowntree, presented the following definition of poverty in 1901: *"poverty is insufficient income for the acquisition of the minimal amount of necessities (food, household, clothing etc.) that are required in order to support a person's physical capacity"* (Townsend, 2010). This definition refers to the importance of a person's capability, as only by being capable/active an individual is able to perform various activities. It could be claimed that a person receives the energy required for physical activity from food, thus, according to Abraham Maslow, the acquisition of food as a fundamental human physiological need is necessary. Inability to ensure the amount of food necessary for the support of physical activity may mean that an individual is experiencing poverty.

Due to the narrow nature of these concepts of poverty, as they emphasise its economic aspect, the definitions were criticised in the second half of the 20th century and proposals emerged of alternatives or updates of the concept.

An economist and explorer of the concept of poverty, P. Townsend (2010), claimed that *"poverty is a dynamic, shifting concept, as a human himself is a social being who exists in the society, therefore the poor can experience not only monetary but also social poverty. They are eliminated from the life of the society"*. This definition is important because it focuses on the non-static nature of the phenomenon and notes that poverty can be not just economic (monetary) but also social. The scientists started looking at human needs somewhat more broadly. It was previously claimed that good quality of human life requires assurance of economic goods, but the term's understanding has shifted: it now includes satisfaction of individuals' social and spiritual needs.

Harold Watts observed that the phenomenon of poverty should be explored from two vantage points. Poverty should be divided into economic (monetary) and non-monetary. Economic (monetary) poverty is the insufficiency of economic resources possessed by a group of the population for the purchase of economic goods and performance of economic transactions. Economic poverty describes the status of the individual. Contrary to monetary poverty, the definition of non-monetary poverty is the characteristics of the individual's internal state of mind, the nature of his behaviour, in other words, it is the social discomfort that is being experienced (Watts, 1964). In this definition, poverty is separated from the hindrance of needs' satisfaction resultant from only economic / financial restrictions. Economic poverty is based on quantitative characteristics of poverty measurement, while non-monetary poverty is defined by various aspects of social, demographic and personal characteristics, and consequently is more difficult to measure.

Thus, the latter definition reveals that today, as we consider the definitions of poverty by early researchers Smith and Marshal, they could be assigned to the category of economic poverty.

A. Sen (1987) underlines that income of an individual is *"as significant as the degree to which they increase a person's possibilities and provide the opportunity to take part in the social life"*. Sen takes into account that a human is a social being and "functions" in a group, community, society. As an evaluation of the researchers' definitions of the concepts, it could be claimed that

they all agree that a certain threshold (which may differ in different societies) exists for income which is necessary in order to satisfy the main/minimal needs necessary for human existence. However, it is noteworthy that minimal satisfaction of various human needs cannot ensure his effective development and improvement.

The concept of poverty has been defined not only by individual researchers but also various international, cross-border organizations. The European Commission, the executive organ of the economic and political community of the European Union, adopted a ruling in 1984 that people experiencing poverty are defined as individuals, families or groups of individuals whose resources (material, cultural, and social) are insufficient for the assurance of the minimal lifestyle prevalent in their country (Forster, Tarcali and Till, 2004). Evidently, this definition was prepared after taking into consideration the criticism of the previous definitions of the phenomenon. Since the European Union consists of many countries of Europe (and their number keeps increasing as it is joined by new member states), the definition of the European Commission emphasises that different countries have different subsistence levels.

The United Nations, an organization which tackles various economic, social, and humanitarian problems, declares that in essence poverty is the inability to have possibilities and choice, a violation of human dignity. In other words, it is the lack of basic possibilities to effectively take part in the society, absence of sufficient food and clothing for oneself and family members, unavailability of school or medical centre one could attend, lack of land where one could grow oneself food, absence of a job which would earn one money, and inability to receive credit. This signifies insecurity, powerlessness, and exclusion of individuals, households, and communities. The situation of poverty increases sensitivity to violence and is usually characterised by people living in a vulnerable environment which potentially lacks access to clean water and the appropriate sanitary conditions (Gordon, 2005). The UN's concept of poverty is much wider, i.e. more detailed, than the previously analysed definitions. This is because the UN has founded numerous specialized agencies (FAO, WHO, UNDP etc.) whose goals are associated with the tackling of poverty and its consequences, and the presented definition simultaneously enables a better understanding of the UN's areas of activity. A wider definition gives a clearer picture of the potential consequences of poverty and demonstrates marked distinctions between countries and regions. Access to clean water or assurance of sanitary conditions and stable supply of electricity may not be among the problematic areas in developed countries, whereas in the developing world it is a daily issue which is still difficult to solve.

World Health Organization, a subdivision of the UN, describes poverty as violation of fundamental human attributes, including health. People who face poverty are unable to adequately feed themselves, and the poor receive less information and find it harder to reach the centres that provide medical services, as a result facing greater threat of contracting various diseases. The diseases result in the diminishment of income and savings, affect their productivity, and the quality of life in general suffers even more, increasing the level of experienced poverty (WHO, 2005). Clearly, this definition of poverty has been determined by the nature of the organization's activities and focuses more on the consequences of poverty to the human health. This description, like several others, underscores that people who experience poverty cannot feed themselves adequately. Significantly, the usage of the word "adequately" may be understood at several levels, in terms of both quantity and quality. It is important that the food consumed by the person was not only adequate in quantity but also appropriate in the extent of its energetic impact and characteristics of the microelements. Typically the individuals who have low financial funds to spend on food resources cannot choose high-quality food products.

In Lithuania, people who experience poverty are defined as those whose income and other resources (material, cultural, and social) are so scarce that they do not ensure the standards of living that are common to Lithuanian society. Due to insufficient income or other resources, these people

cannot take part in the fields of activities that are considered commonplace to other members of society (*Poverty Reduction Strategy*, 2000). This definition is presented in the strategy of poverty reduction, which was published in 2000 and has remained unchanged until now. The definition given in this strategy is identical to the one proposed by the European Commission. As explained below, the EU member states use identical indicators to describe poverty. This makes it possible to compare the situation in different countries, to present the general statistics of the region, and to objectively present the extent of poverty. Thus, naturally, the definition of the term is identical as well.

After exploring the trends of the changes in the concept of poverty over the recent decades, a shift was noted from the focus on insufficient funds for the satisfaction of fundamental physical needs to the analysis of the concepts of individual quality of life, equal opportunity, and the freedom of choice and possibility. There is also a heavy emphasis on the general prevalent living conditions in the country. Importantly, the variation between the definitions of the concepts has been determined by the differing societies from which the field's researchers hail, or the varying interests of the organizations, e.g. the World Health Organization sees poverty through its impact on individual health, whereas economists and organizations promoting economic growth tend to describe poverty only in terms of insufficient financial resources. Usually the poor are defined as people whose resources and quality of life are lower than the average standard in the country. It is possible to claim that the concept is multifaceted and constantly shifting, depending on how the society and the phenomenon of poverty itself are developing.

In order to continue the research of the issue and the consequences of poverty, especially in different regions or countries, it is necessary to consider how poverty is perceived in that country and what the minimum resources required to satisfy the people's needs are. In one country they may be considered poor while in the other they may be named average income recipients. In Lithuania, the definition of poverty includes physical as well as social and cultural aspects. This leads to the conclusion that the definition of poverty in Lithuania is similar to the definitions of poverty in other more developed countries.

The causes and concepts of poverty. There are several different theories on the causes of poverty prevalent in scientific literature foreseeing certain actions in order to minimize or eliminate those causes. Economist R. Kersiene (2011) named 5 factors that cause poverty:

- *Poverty is caused by individual shortcomings.* Individuals are responsible for their poverty situation. It is assumed that they would avoid this problem by working more and harder. Often attempts are made to explain this poverty-causing factor by certain predetermined genetic characteristics (e.g. intellectual aptitude). Based on this perspective, various anti-poverty programs are implemented whose aim is to employ the poor.
- *Poverty is caused by cultural beliefs.* Poverty is created by a multitude of prevalent beliefs, values, and skills that are transferred from generation to generation. It is noted that people are not to blame for being simply a part of a certain culture or subculture. Simply put, individuals are impacted by the environment in which they function. This perspective differs from the first one, which was about individual shortcomings, in that it establishes that in the case of cultural beliefs there is no appeal to the person's abilities. Poverty culture is actually the culture of poor people who live in isolated communities or poor regions, or it is the social conditions in which they create their own rules, lifestyle norms, and values that are usually clearly different from those of the remaining majority of the society.
- *Poverty is caused by economic, political, and social deformations or discriminations.* This perspective emphasises that the cause of poverty is an economic, political and/or social system. It claims that the imperfections and weaknesses of the individuals result in limited alternatives and resources for them that could ensure the creation of welfare. It is considered that, because of the "faults" of the system and regardless of their competences, the disadvantaged lag behind the people with average income. The benefits provided by the social protection, includ-

ing healthcare and health promotion, are also insufficient for the low-skilled workers. Obstructions of elimination of poverty exist together with the political system in which the interests and participation of the poor are hardly possible, or their interests are represented wrongly and poorly. This is because the poor are less interested in political matters and rarely take part in discussions, and thus the representation of their interests is poor or lacks strong support.

- *Poverty is caused by geographic differences.* The poverty of rural areas and the slowly developing countries reveals that poverty can be caused by an unfavourable geographic location. In certain regions, the resources necessary for the assurance of the population's well-being are not as easily accessible as in other countries. These regions are not as competitive and struggle to attract investments that could reduce the risk of poverty. This perspective, which names geographic differences as the cause of poverty, proposes that the problem could be solved by focusing on resources and processes that could make the region independent. It proposes promotion of the competitiveness of local businesses, the creativity of the members of society, the investments into development of various infrastructures etc.
- *Poverty is caused by accumulated and cyclical inter-dependencies.* This perspective on the emergence of poverty combines the components of the previous perspectives. It examines separate members of the society and the people in their surroundings that have found themselves in a circle of opportunities and obstacles which becomes cyclical. To put it simply, each action has a reaction and, as a result, a chain reaction is created. For instance, at the state level, as the number of the poor increases, the portion of the budget allocated for the social benefits also increases, the amount of taxes collected by the state decreases, less funds are allocated for the promotion of business etc. At the individual level, insufficient resources for learning result in lower qualification, which may affect employability and financial stability, decline of personal motivation etc. In order to combat the poverty that arises from these issues, socialization, creativity, and relationships with the people in the surroundings have to be encouraged, leadership qualities have to be developed, skills have to be improved, and an attractive environment has to be built (Kersiene, 2011; McKernan and Ratcliffe, 2005).

All of the described causes of the emergence of poverty delve deeper than just the economic nature of poverty. Here it is seen as just one of the components of the process. Evidently, poverty is multidimensional. The analysed causes may arise as a combination of several of them in one place simultaneously, thus making the phenomenon of poverty even more complicated.

In the analysis of the understanding of poverty, two main concepts of poverty can be distinguished: absolute poverty and relative poverty (Sileika and Zabarauskiaite, 2006). These two concepts are fundamental and very significant in the attempts to measure the boundaries of poverty and other indicators of poverty. These concepts diverge in their perspectives on people's needs depending on the level of their well-being in the country they live in.

In the concept of absolute poverty, poverty is associated with the minimum level of satisfaction of personal needs (which has a tendency to increase as the production and the progress of the entire society increase). In other words, it is the minimum standard of consumption. Based on this concept, a certain quantity of economic resources is determined which ensures the minimum satisfaction of the personal needs of the residents. Individuals whose income is lower than this predetermined amount (i.e. the threshold of poverty) are defined as poor (Bidani, Datt and Lanjouw, 2001; Bellu and Liberati, 2005). Generally, absolute poverty is the condition when the family income is lower than the predetermined official threshold of poverty. *In Lithuania*, the equivalent of this threshold of poverty is the basic social benefit (previously called MGL, the minimum standard of living).

Notably, the concept of absolute poverty is more widely applied in the analysis of poverty issues in the less developed countries where the individuals suffering from poverty have insufficient financial resources to satisfy their minimum essential needs (Sileika and Zabarauskaite, 2006).

Another widely popular concept in the analysis of poverty issues is *the concept of relative poverty*. The essence of this concept is the following: it is based on the measurement of the individual standard of living, which is defined in relation to the distribution of the economic resources available to other residents, or, in other words, to the average standard of living in the country. In the case of the concept of relative poverty, the poor are defined as the individuals whose economic (financial) resources are much lower than the average of the country (Bidani, Datt and Lanjouw, 2001). It can be said that the concept of relative poverty interprets poverty as the phenomenon of economic inequality between individuals. Analysis of the concept of relative poverty distinguishes the relative threshold of poverty, which is related to the average indicators of income/expenses: the mean and the median. It is precisely the relative threshold of poverty that is completely dependent on the distribution of income/expenses in the society, it shifts as the distribution of individuals by the standard of living is shifting, i.e. as the average standard of living in the country is increasing or decreasing. The relative threshold of poverty rises as the income/expenses rise as well. As a result, the relative threshold of poverty is higher in the richer regions. The relative level of poverty is typically measured in the developed countries (Sileika and Zabarauskaite, 2006). The developed countries focus more on the social and cultural rather than physical features of poverty. Since the relative threshold of poverty varies from region to region, this concept is not very appropriate for comparisons at the global level. Furthermore, there are many cases when the country has great extremities: its population includes both very rich and very poor residents. In such a case, the relative threshold of poverty is distorted and does not represent the actual situation.

Based on scientific literature, the concept of relative poverty is used in the more developed countries, as the income is much higher, therefore, in order to measure poverty, both the physical and the social-cultural aspects of poverty are used (of course, taking into account the culture and traditions of the specific country). That is, if the individual even has sufficient financial resources to satisfy the essential physical needs, he may consider himself poor because his income and standard of living is much lower than the average level in the country he lives.

In the analysis of scientific articles (Bidani, Datt and Lanjouw, 2001; Ravallion, 2008), another concept can be distinguished: that of the subjective poverty. The concept of subjective poverty demonstrates the assessments of the individuals themselves, their opinion of their quality of life and satisfaction of personal needs. Based on the concept of subjective poverty, the minimum amount of resources, i.e. the acceptable standard of living, is determined by the country's residents themselves. The subjective threshold of poverty is determined by inquiring the respondents on what amount of money they would find ample to satisfy their minimum needs. Typically the subjective threshold of poverty is much higher than the threshold of poverty calculated using other methods, as it is established by researching individuals who receive varying amounts of income, and the minimum needs of the rich are much higher than those of the poor. This concept is not used, because usually the aim is to measure and evaluate the poverty level in the country as objectively as possible, and this method is not objective.

The diversity of the concepts of poverty makes it possible to better understand the issue and provides the opportunity to measure it in different ways. The absolute threshold of poverty and the relative threshold of poverty are representative indicators that can be utilised to evaluate the situation, to observe a shift in a specific interval, or to compare regions. Subjective concept of poverty is not as representative, but it can be helpful in exposing the views of the public and the dominant perspective on the issues of income, expenses, and prices. It can also help determine how accurately the public perceives the issues of poverty present in the country.

2. THE ISSUE OF FOOD SHORTAGE

Relations between poverty and food shortage. The socio-economic status of the family (financial resources, human and social capital) affects the entire family and the development of the children. Adults and children who experience deprivation are at higher risk and can be more vulnerable both physically and emotionally and have more problems with health and behaviour (Conger and Donnellan, 2007). Children aged 5 or less are particularly vulnerable to malnutrition, which is mainly a consequence of poverty. Hunger may not be experienced but the quality of food and the amount of microelements necessary to the organism are very important. Shortage of necessary substances raises the threat of anaemia, hindered mental development, absence of immune system, and blindness (Gilbert, 2004). It may be concluded that hunger and malnutrition are the main risk to health. If countries are unable to ensure that their residents are adequately fed, i.e. that there are sufficient food resources, then the poverty level of the country will not be reduced and the state's economic development will be in disarray. Usually, as a result of complicated financial status, families are at risk of poverty and social exclusion.

Hunger is typically perceived as the condition caused by the shortage of food. It is the desire to eat and the deficiency of energetic food substances in the organism. The individual senses inexorable urge to seek food. In the analysed sources of information, hunger is described as the sense of discomfort caused by the sensations of the body due to the desire to receive more food. All people experience this sensation at some point or another. However, to the people in the developed countries, this feeling is usually short-lived, until the time when another dose of food is received, according to the predetermined normal daily diet (The hunger project, 2008). When the sense of hunger continues for a longer time period, and the individual does not receive food, this signals an issue that can have grave consequences.

The commonly used terms are food shortage, *undernourishment*, and *malnutrition*. The first two terms mostly reflect the quantitative perspective on food, which can be determined by various factors. The term *malnutrition* describes qualitative aspects of food and refers to the energetic value of food, the shortage of mineral elements that are necessary for a balanced development of a human organism.

Many people in the world are unable to properly feed themselves because they lack enough funds to acquire food, much less better quality food which would have more of the necessary microelements. Food shortage is also characterised by individuals lacking funds to acquire the substances required to grow food. In the analysis of the relations between poverty and food shortage issues, it is necessary to emphasise that not every poor person experiences hunger, but the people who face food shortage are almost always poor. Taking into consideration the consequences caused by the phenomenon of poverty, hunger and the even more horrible stage of food shortage, starvation, are assigned to the category of absolute poverty. It is often mentioned that this is an instance of extreme poverty.

As stated by numerous researchers (Townsend, 1985; Gilbert, 2004; Sileika and Zabauskaite, 2006; IFPRI, 2013 et al.), the poor experience hunger because of various reasons: high prices, global economic recession, diseases, exclusion and discrimination, inadequate government decisions and ruling, unfavourable country climate, natural disasters.

Notably, the group of the hungry also contains highly vulnerable groups that require greater attention to nutritional substances, namely people who have various diseases such as AIDS or tuberculosis, pregnant and breastfeeding mothers, small children. The solution to the issue of food shortage has to be immediate, before the risks and challenges arising from the problem can no longer be theoretically and practically managed. If no actions are taken, the consequences can be tragic and even with the forces of the global community and organizations, the problem will not be solvable.

According to the data of the European Commission (2012), 40 million of the 116 million EU population experience great material deprivation and poverty, while one of the greatest manifestations of deprivation is food shortage, “*individuals cannot receive food in sufficient amount and quality*” (European Commission, 2012). Children facing poverty are an acute problem, as they are one of the most vulnerable risk groups. In the EU, 25.4 million children are threatened by poverty and social exclusion, which can result in adverse health effects, decline in learning performance etc. The Europe 2020 Strategy intends to reduce the number of the poor and individuals in the risk group by 20 million until 2020.

The aims of the reduction of poverty and hunger issues are named as the first item in the Millennium Development Goals. Thus there can be no doubt that this is a priority area not only in the developing countries but also elsewhere in the world.

Historical development and statistics of food shortage. Food shortage and hunger result in a much more complex socio-economic phenomenon: starvation. Starvation may be treated as the consequence of poverty. It may also arise due to various natural disasters (e.g. earthquakes, floods, droughts), military conflicts (Afghanistan, Balkan countries during the Spring of Hungry Nations), extreme country policies (North Korea), or the country’s geographic location in infertile lands (the Southern part of the Sahara desert in Africa). The threat of starvation also increases as the population rapidly rises and the food production cannot be increased accordingly. The issue of starvation and food shortage has been recorded in historical sources as early as 2500 B.C. in ancient Egypt. In the European history, large scale food shortage has been mentioned since 9th century, usually as a result of infertile years, drought, wars, or economic crisis. Russia, Ireland, France and Great Britain are countries where the issue of food shortage was frequent and pronounced during the Middle Ages (5th – 15th c.) and the modern times (15th c. – 1918). In a large number of countries, food shortage and eventually starvation was a major problem both during and after the years of World War I and World War II. In the Nazi and Soviet totalitarian systems, starvation was used as a measure of genocide (Jonuškiene, 2002).

Table 3. The prevalence of undernourishment (population size and percentage of prevalence rate)

	1990-1992	1999-2001	2004-2006	2007-2009	2010-2012
Global total	1000 million	919 million	898 million	867 million	868 million
	18.6 %	15 %	13.8 %	12.9 %	12.5 %
Developed regions	20 million	18 million	13 million	15 million	16 million
	1.9 %	1.6 %	1.2 %	1.3 %	1.4 %
Developing regions	980 million	901 million	885 million	852 million	852 million
	23.2 %	18.3 %	16.8 %	15.5 %	14.9 %
Africa	175 million	205 million	210 million	220 million	239 million
	27.3%	25.3%	23.1%	22.6%	22.9%
Asia	739 million	634 million	620 million	581 million	563 million
	23.7%	17.7%	16.3%	14.8%	13.9%
Latin America and the Caribbean	65 million	60 million	54 million	50 million	49 million
	14.6%	11.6%	9.7%	8.7%	8.3%
Oceania	1 million	1 million	1 million	1 million	1 million
	13.6%	15.5%	13.7%	11.9%	12.1%

Source: FAO (Food and Agriculture Organization of United Nations). The State of Food Insecurity in the World (2012m.)

Today the subject of food shortage is very acute in the countries of Africa and Southern Asia. Numerous globally functioning charity organizations have been founded in order to fight this

global problem, e.g. Food Bank, Caritas, Order of Malta. These organizations function as representations in various countries. In 1961 the United Nations founded *the World Food Program*, which is dedicated to providing food support during and after emergencies, helping the communities recover. In order to tackle the starvation problem globally both in developed and developing countries, the UN Food and Agriculture Organization was established in 1945. This organization seeks to increase the agricultural productivity, to raise the quality of living conditions in remote regions, and to contribute to improved nutrition opportunities and economic growth. The organization prepares reports of statistical data on the size of the population suffering from malnutrition (*The State of Food Insecurity in the World*). In the report for 2012, the organization analyses how economic growth can contribute to the reduction of the food shortage issue and also presents the data of the last 20 years (Table 3).

The data presented in Table 3 demonstrates that the greatest extent of insufficient nutrition is in the developing regions, where the undernourishment affects about 852 million residents (in 2012). The major progress was achieved before 2007, and since then the reduction of global starvation has remained almost invariably stable. The cause of this is thought to be the increase of food prices and the global economic crisis. Taking into account the scale of the growth of GDP and GDP per capita in various regions, it is worth noting that the economy has been growing steadily over the last decade (even though a decline is evident when the global economic crisis struck in 2008, after which the GDP growth slowed down). It could be claimed that this contributed to the reduction of the issue of food shortage. According to the FAO (2012), in order to strengthen the influence of economic growth on the diminishment of the problem, it must be ensured that:

- *The growth would reach and include the poor.* It is likely that the increased employment opportunities would result in increased income to the unemployed poor people. Whether or not the consequences of economic growth will contribute to the reduction of poverty will largely depend on the level of inequality in the country. The greater the inequality between the social groups in terms of access to various resources (land, water, education, health), the harder the poor will find it to join the growth process. Because of high inequality, especially in education, the poor people will struggle to find a job with better pay. However, it is likely that economic growth in the agricultural sector can assist more in the decrease of poverty and its consequences, as the agricultural growth has a direct positive influence on the remote locations where the impoverished people reside as well.
- *The poor would use the extra income on the improvement of food quantity and quality, health, and sanitary conditions.* A problem is encountered as even though the higher income is spent on food, its energetic value is not considered, instead giving the priority to taste and smell. In other words, individuals wish to consume more valuable food but, primarily, tastier. The Food and Agriculture Organization also notes that women who have more influence on the management of household income spend the extra funds on the food that is healthier and has greater energetic value.
- The government would accumulate resources for public products and services (education, public health services etc.) that would benefit the poor and the hungry. There is encouragement of the reforms and programs of various institutions and investments into remote areas in order to improve the lives of the poor. According to the organization, a large portion of public revenue should be allocated to the education on the issues of finances, skill development, and public health measures.

Considering these three aims, it is clear that a structure and purposeful political decisions are necessary. The problem of hunger also needs to be given a priority. A correlation is required between the political decisions and actions as well as the institutional transparency and performance of obligations. In order to ensure that consumption habits change in a positive way as the income increases, information campaigns are necessary for the target groups on the energetic value of

food and the possibilities of choice and alternatives. On the other hand, a lot of benefit can be provided by including the target vulnerable group in the process of decision-making.

Global Hunger Index. When analysing the projections of population growth, the feeding / support of the entire humankind becomes relevant. For this reason, there is an aim towards such a production of goods/services that would make it possible to provide more and ensure the necessary standard of living while using less resources. In pursuit of this goal and based on Maslow's hierarchy of needs, in which the need of food is the main one, the problem of global hunger has to be solved. The solution of the problem of food shortage has been rather slow in the last several decades and the Millennium Development Goal to "halve poverty and hunger in the world" will not be fully achieved before 2015.

The International Food Policy Research Institute (IFPRI), founded in 1975, proposed the *Global Hunger Index* in 2006 as a method to measure the problem of hunger in the world. This collection of multidimensional statistical data, which is updated annually, demonstrates the country's status in terms of hunger. The Global Hunger Index is used as measurement in 120 developing and transitional countries. Utilising this index, a change can be observed not just inside the country but also in the entire region and the world, thus a sufficiently objective comparison of the situation is possible. Food shortage and hunger can be measured in various different ways, using diverse statistical quantitative and qualitative indicators. The use of the latter would provide a large degree of subjectivity if there was a need to compare the countries' food shortage situation. Therefore typically statistical data is used and certain indicators are selected based on it that are collected in the researched countries during a determined time period. Since the issue of hunger is multifaceted, expressing it in one indicator would have little purpose. If there is a unified and sufficiently representative index, it is likely that the problem will be solved more effectively and in a more balanced manner. The examined multidimensional Global Hunger Index consists of three indicators of equal weight that are expressed in percentages (IFPRI, 2013):

- *Undernourishment*. The indicator indicates proportion expressed in percentage of the country's society characterised by undernourishment, i.e. receiving insufficient amount of necessary mineral materials.
- *Child underweight*. The indicator indicates the proportion of children aged younger than 5 whose weight is too low taking into consideration their age. It reflects the children's exhaustion and normal pace of growth.
- *Child mortality*. This indicator indicates the mortality of children aged younger than 5. The indicator partly reflects the consequence of insufficient nourishment and inadequate, unhealthy environment.

Evidently, this index the most clearly reveals the risk level of the most vulnerable group, children, to be categorized together with the hungry. In spite of the distinction of the separate population group (children), the index also reflects the remaining portion of the society which is unable to feed themselves adequately.

After managing the data methodically, the index is presented on the scale from 0 (countries that do not face hunger) to 100 (extreme hunger situation in the country). Notably, the index's extremities of 0 and 100 do not exist in practice. After preparation of the index, countries are assigned to one or another group based on the degree of the problem:

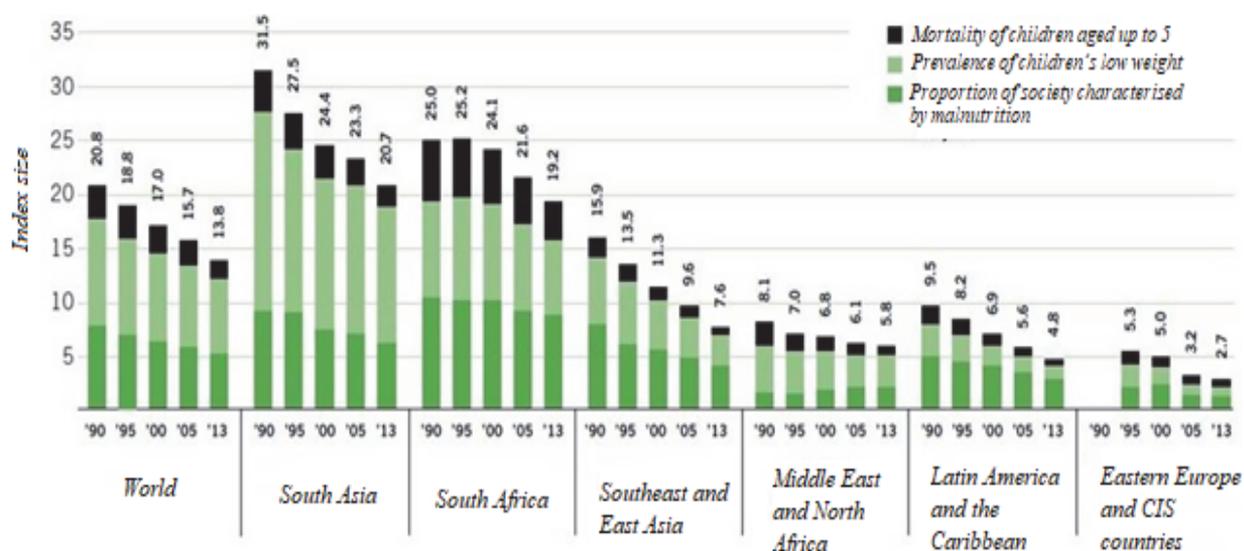
- 0–4,9 low
- 10–19,9 serious
- 30–100 extremely alarming
- 5–9,9 moderate
- 20–29,9 alarming

The data presented in Figure 1 clearly reflects the inequality between different regions of the world. The differences are particularly extreme when comparing the region of Eastern Europe

and CIS countries with the region of South Asia. Even though in the latter region the value of the index declined the most – by 10.8 (from 31.5 to 20.7) during the analysed period of over 20 years, it still remained the highest in comparison with other regions in 2013.

Taking into consideration the Millennium Development Goals, it is foreseen that the goal will not be completely achieved until the intended date. However, when we evaluate regions separately, it can be observed that in the regions of Southeast and East Asia, Latin America and the Caribbean, and Eastern Europe and CIS countries, the hunger problem has halved over the analysed period from 1990 until 2013 (respectively, 15,9–7,6; 9,5–4,8; 5,3–2,7). Still, the regions that raise greater concerns, South Asia and South Africa, affect the overall statistics.

Figure 1. Regional distribution of Global Hunger Indicator's (GHI) components in 1990, 1995, 2000, 2005, 2013.



Source: IFPRI. Global Hunger Index 2013.

Analysing the index's components separately, we note that the child mortality issue is the most evident in the region of South Africa. Significantly, the mortality indicator is highly affected not just by food shortage and undernourishment, but also various diseases, such as malaria, tuberculosis, and AIDS. The children's low weight issue decreased the most rapidly in the region of Latin America and the Caribbean.

IFPRI organisation underlines that due to the shortage of timely data from certain countries (e.g. Afghanistan, Myanmar, Somali), it is impossible to calculate the precise and objective index for some countries and therefore the overall data of the regions may be distorted because of this.

Analysing the Global Hunger Index separately in the countries of Eastern Europe and the CIS countries, it has been noted that in most countries, including Lithuania, throughout the entire researched period the index is expressed as <5 (lower than 5) and is categorized as low degree of the problem. In order to analyse the transitional countries, this expression of the index would not be objective or informative, thus a separate look at each component of the index is necessary.

Even though the Global Hunger Index proposed by the IFPRI is probably the most popular, the most frequently mentioned in literature, and combines three different aspects of hunger issues,

nevertheless the method has also received criticism. According to Masset (2011), all three indicators used in order to calculate the index correlate highly between themselves and thus duplication is unavoidable during calculation. Doubts are expressed in the decision to add up the percentages of indicators without introducing a coefficient. The researcher also claims that the index is not very sensitive to changes, especially short-term ones.

Food system. When discussing the reduction of food shortage, also frequently mentioned are reforms of the area's management and efficient policymaking in order to ensure balanced distribution of food and other resources required for the solution of the problem. For this purpose, food system and its models are used. *World Food System is a non-linear system composed of various processes, infrastructures, expenses and production which is dedicated to the solution of the issue of population feeding* (Grant, 2012). The system makes it possible to rationally review the elements and their unions. Food systems provide support to the solution of the issue of hunger by considering the population's well-being and health, the environmental and social surroundings, and the economic context. P. J. Ericksen (2008) claims that *food system is an interaction between the biological, geological, physical, and human environment. This interaction determines various activities (from production to consumption) that in turn determine results (social security, environmental safety etc.)*. Evaluating the definitions of the concept, we observe that food system is dependent on the social, environmental, and economic status: all elements of sustainable development are included.

Naturally, the entire environment is changing and developing, the extent of urbanization is shifting, and technological progress is achieved, therefore the system itself has to change and adapt to today's conditions (Table 4).

Table 4. Comparison of the features of traditional and modern food system

<i>"Traditional" food system</i>	<i>"Modern" food system</i>
Employment of people in food production.	Employment of people in food processing, packaging, and retail.
Supply chain is short, local.	Supply chain is long.
Food production is diverse, of varied intensity.	Food production variety is low, but of high intensity.
Typical farm is small to moderate.	Typical farm is industrial, large.
Typical food consumed is basic staples.	Typical food consumed is processed.
Food is purchased in local shops or markets.	Food is purchased in supermarkets.
Nutritional concerns include under-nutrition. Insufficient quantity of calories and necessary micro-elements.	Nutritional concerns include overconsumption of fat, sugar, and salt. Chronic diseases resultant from dietary habits.
The main threats to the system are unfavourable weather and production disturbances.	The main threats to the system are international price and trade problems.
The main environmental threats include soil degradation, land clearing, and pesticide pollution.	The main environmental threats include chemical runoff, increasing water demand, and harmful gas emissions.
Influential scale spans from local to national level.	Influential scale spans from national to global level.

Source: adapted from Maxwell, S. and Slater, R. Food policy Old and New (2003).

When analysing the changing elements of the food system it becomes clear that industrialization has a very high influence. The change from buying products in local shops or markets to purchasing them in supermarkets is yet another change which at first glance would seem to have a negative connotation, as there is frequent encouragement to support local business. However, from a wider perspective, supermarkets are often a part of global corporations and can offer a

wider selection of products and higher quality goods and also ensure delivery of large amounts of food at the required/predetermined time. Obviously, the new food system does not necessarily have to be seen as universally better and more innovative. This statement is confirmed by the aspect of environmental threats, which remain or in certain cases even increase in a modern food system. These environmental threats may be caused by the same new technologies that promote the changes. Additionally, today's threats include GMOs (genetically modified organisms), and chronic diseases such as obesity, diabetes, etc. that are caused by inadequate nutritional habits. Naturally, the latter issues are much more relevant in the developed regions. Another important change is the shift towards commercial growers and sellers, and most people work not directly with food and growth but in other areas of the food industry.

A systematic view makes it possible to understand the fundamental factors and the results of their interaction that determine the actions of the stakeholders. The Food and Agriculture Organization, working together with scientists (Kennedy, Nantel and Shetty, 2004), presents a conceptual model of the food system. They (Ibid.) points out that a conceptual model is more applicable in the developing countries. The following elements are distinguished as the most important in causing changes in the system:

- Economic factors.
 - ✓Urbanisations, market liberalisation, direct foreign investments, income increase.
- Food product supply.
 - ✓Manufacturing of food products based on intensive agriculture, long shelf life of product, replacement of food markets with supermarkets, food availability in all seasons.
- Social factors.
 - ✓Migration of rural and urban populations, increasing women's employment, sedentary lifestyle.
- Nutrition habits.
 - ✓Blending of different dietary habits, food product selection is based on accessibility, increased amount of consumed fat, sugar, and salt.

It is evident that, in the analysis of the food system, a holistic, all-encompassing approach has to be applied. The elements are related to one another. For instance, looking at the factors of the food product supply – supply through supermarkets and accessibility in all seasons determine a factor of nutrition habits: the wider selection of food products. Another example: a social factor – migration of rural and urban populations – affects a factor of nutritional habits – the blend of different dietary habits etc. It is worth emphasising that in order for this system to work, supervision of various institutions and their mediation in the coordination of economic and social factors are required.

In conclusion, it can be claimed that the model of food system reflects the undergoing changes in the society, the economy, and, of course, in food production, distribution, and consumption. A clear system is required in order to ensure food security, a solution to the issue of food shortage has to be developed in a sustainable way and the sustainable development strategy has to be implemented. The aim is to combine various systems related to food production, delivery/distribution and waste management, and to improve both the economic and the social situation. The combination of the systems enables assurance of a more efficient use of various types of resources.

CONCLUSIONS

The implementation of sustainable development is based on strategies, and even though they are not legally binding documents, it is customary that regional strategy plans are ratified and adapted by countries at national level. Each country has different problematic areas and their governments determine which areas is high priority. National governments have to ensure transparency of the implemented projects, financial investment opportunities, and distribution of responsibilities among institutions that have to be renewed as well. The progress is best measured by utilising indicators. They make it possible to evaluate separate phenomena, fields, cities, and regions.

In the context of sustainable development, the social field has become more relevant, as it is observed that poverty level is not decreasing in the world. A demand emerged to explore the content of poverty as a separate element. In the understanding of poverty, there was a gradual shift from the initial idea – the emphasis on insufficient income for the satisfaction of the primary physical needs, to the analysis of individual quality of life and the concept of the possibilities of choice. The phenomenon of poverty is multifaceted and constantly shifting depending on the development of the country and the entire society, and consequently scientific literature distinguishes the following causes of poverty: individual personal shortcomings; cultural beliefs; faults of the economic, political, and social system; geographic differences; accumulated and cyclical inter-dependencies.

It was determined that generally people become poor due to the lack of financial resources and inability to receive income, while the chief manifestations of poverty include unemployment, emigration, and food shortage. People who experience poverty are at risk, individuals are more vulnerable and face more severe/frequent health problems, while their resources and general quality of life are lower than the average level in their country. For the purpose of nurturing a stronger, healthier society and reducing the problem of hunger more rapidly, a structured social security system is required.

It is highly important to deepen our understanding of the issue of poverty, to seek methods of reducing the problem, and to purposefully direct economic growth toward the decrease of the poor. This is significant because individuals who suffer from poverty have no possibilities to effectively take part in the social life, which not only reduces their possibilities to be represented in the respective institutions and in the policymaking, but also results in the disturbance of the opportunity to realise their potential, damage of their health, unbalancing of society, negative impact on the environment, and violation of the concept of sustainable development.

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