FOOD SECURITY AND NUTRITION MONITORING IN THE NEW GLOBAL AGENDA "SUSTAINABLE DEVELOPMENT GOALS - 2016-2030"

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ARTICLE INFO

Received 09 March 2018
Accepted 05 April 2018
Published 15 April 2018

KEYWORDS

monitoring,
food security,
system,
global dimension,
information provision,
national level,
global level,
FAO

ABSTRACT

The article investigated the current state of affairs in the monitoring and information provision of the food safety formation's and nutrition's areas in the early stage of implementation of 2030 Agenda for Sustainable Development in Ukraine and in the world. The article highlights the key problems associated with the measurement under monitoring progress towards the second objective of Sustainable Development Goals (SDG 2), which is to eliminate the hunger, food security providing, nutrition improving and sustainable agricultural development. Established key links both between SDG 2 and others SDGs, described the main problems of monitoring of achievements in improvement of food security and nutrition indicators. Established the problems of monitoring and information support of the food security formation at the national and global levels for the purpose of its' unification in the future.

Introduction. On September 2015 the 193 Member States of the United Nations adopted the 2030 Agenda for Sustainable Development. It includes 17 Sustainable Development Goals (SDGs) and 169 targets that will guide the actions of governments, international agencies, civil society and other institutions over the next 15 years. Latitude and multi-components of the 17 SDGs and their 169 targets pose an important question about the creation of a functioning framework monitoring system. The UN Statistical Commission, mandated by the UN General Assembly to select the indicators to monitor the 2030 Agenda, had to face the dilemma of ensuring that the total number of SDG indicators was limited, while simultaneously ensuring that it did not alter or reshape the Agenda.

International agencies have an important role to play in global reporting, as they are not only responsible for collecting data from national sources and aggregating them at sub-regional, regional and global levels ensuring their comparability, but also for producing annual global progress reports for the SDG targets under their mandate, for further improving the methodology of certain SDG indicators, and for contributing to strengthening the statistical capacity in countries to produce SDG data.

The aim of this work is to study the approaches to the formation of monitoring systems and the information support of food security at the national and global levels for the purpose of its' unification in the future.

Research results. In 1996, the World Food Summit (WFS) has set a goal "hunger's eradicatation in all countries, with a reduction the number of undernourished people up to half of present level, no later than 2015". In 2000, in the Millennium Declaration (MD) the importance of overcoming hunger and poverty reducing was recognized through the establishment of the Millennium Development Goals' (MDGs) to halve, between 1990 and 2015, the proportion of people who suffer from hunger' (MDG 1.3).

FAO received a mandate to monitor progress in achieving the goals set by the WFS and the MDGs. FAO Statistics Department systematically working to improve the methodology and criteria needed to assess the spread of malnutrition.

In the framework of the Roundtable on hunger measuring, organized in the FAO's headquarters in September 2011, on the recommendation of experts has developed "initial" set of indicators by which, proposed to conduct the research of various aspects of food safety.

The choice of indicators was due to the importance of peer review and availability of the data in the database to be able to compare by regions and dynamics. Information on the evaluation methodology and indicators mentioned directly on the official site FAO (FAO, 2017), which the

organization brought together in a single database to provide an open access to information and creating a food security volumetric information system.

In 2011-2012, FAO has improved methodology for assessing the spread of malnutrition towards determining the most suitable model for describing the usual dietary energy consumption and improving the estimation of its parameters. In particular, it introduced a deviation from the normal distribution.

Further refinement of the methodology were introduced in 2014. There was a new method for assessing the variability of consumption for countries with no survey data, obtained from the ratio between the coefficient of variation of GDP per capita, the Gini coefficient and food prices.

The indicators classified by measuring four food security's components – availability, access, utilization and stability (Table 1).

Table 1. Indicators of food security and their information support

Indicator	Source of information	Availability of information
Food Availability		
The average dietary energy sufficiency	FAO	1990-2016
The average cost of food production	FAO	1990-2013
The proportion of dietary energy from cereals, roots and tubers	FAO	1990-2011
The average supply of proteins	FAO	1990-2011
The average supply of animal protein	FAO	1990-2011
Food Access		
The share of paved roads in the total number of roads	The World Bank	1990-2011
The density of roads	International Road Federation, World Statistics of Roads and Electronics	1990-2011
The density of railways	The World Bank	1990-2012
Gross domestic product per capita	The World Bank	1990-2013
The domestic price indices for food	FAO, International Labour Organization, The World Bank	1990-2014
The spread of malnutrition	FAO	1990-2016
The share of spending on consumer goods by poorest households	FAO	the partial
The depth of food shortages	FAO	1990-2016
The spread of malnutrition	FAO	1990-2016
The Stability of Food System		
Coefficient of dependence on imported cereals	FAO	1990-2011
The share of arable land with irrigation equipment	FAO	1990-2012
The cost of food imports over than total exports of goods	FAO	1990-2011
Political stability and absence of violence / terrorism	The World Bank, World Giving Index	1990-2013
Volatility of domestic food prices index	FAO, International Labour Organization, The World Bank	1990-2014
Volatility of food production index per capita	FAO	1990-2013
Volatility of food supply index per capita	FAO	1990-2011
The Use of Food and Food System		
Access to improved water sources	WHO, UNICEF	1990-2012
Access to improved sanitation	WHO, UNICEF	1990-2012
The percentage of children under 5 years, suffering from exhaustion	WHO, UNICEF	1990-2014
The percentage of children under 5 years, that are stunted	WHO, UNICEF	1990-2014
The proportion of children under 5 years, with low weight	WHO, UNICEF	1990-2014
The proportion of adults with low body weight	WHO	the partial
The prevalence of anemia among pregnant women	WHO, The World Bank	1990-2011
The prevalence of anemia among children under 5 years	WHO, The World Bank	1990-2011
The spread of vitamin A deficiency in the population	WHO	the partial
The spread of school-age children (6-12 years) with insufficient iodine intake	WHO	the partial

Source: formed according (FAO, 2017)

On September 2015, in a framework of 70th UN General Assembly session in New York was held UN Summit for adoption of the Agenda for Development beyond 2015. The Summit is seen by the international community as an event of historic significance. Summit problems covered all aspects of socio-economic development, national competitiveness, environmental and energy security and a

global partnership for development, and the volume of thorough preparatory work had no precedent in history (UNU, 2017).

Like the Millennium Declaration, the 2030 Agenda, provides a global vision of the whole spectrum of problems in development. The 17 Sustainable Development Goals (GSD) aimed at eliminating poverty and hunger and at the same time for the restoration and sustainable use of natural resources. They combine all three dimensions of sustainable development – economic, social and environmental – of closely related tasks. SDG are indivisible – some tasks are inextricably linked with others, they provide comprehensive and participatory approaches. SDG universal and the 2030 Agenda applies equally to both developed and developing countries (FAO, 2016).

The 2nd GSD – «Hunger overcoming, achieving of food security, the improvement of nutrition and aid for sustainable development of agriculture». This goal includes five targets.

After the summit to the United Nations Member States, were placed new tasks on adaptation the goals determined on the global level, and their monitoring. Ukraine has also started work on establishing sustainable development goals for 2016-2030 years, the relevant targets and indicators for monitoring the objectives (UNU, 2017).

It have reached an international agreement on a number of key indicators to monitor the implementation of SDG 2. However, remain significant gaps in data and difficulties of the methodological plan that must be overcome for effective and timely evaluation of food security and nutrition, to compare information on different countries.

Perhaps, even more serious problem is the search for effective ways to monitor the implementation of the new Agenda in its entirety. The SDG 2 and the related objectives, reflect the diversity of concepts of hunger and malnutrition and, achieving of this goal requires attention to all four dimensions of food security and nutrition, according to the definition gave the Committee on World Food Security (CWFS) and the World Food Summit (WFS) in 1996. What is true for targets indicators for GSD 2, can also be applied to in its links with others SDGs (FAO, 2016).

Currently FAO to monitor food security and nutrition as part of a new global Agenda "Goals for Sustainable Development – 2016-2030" uses a number of approaches and indicators (Fig. 1, Tabl. 2-3).

If for Targets 2.1 and 2.2 the indicators monitoring defined, in relation to other subgoals – they are underway. Currently, FAO has created a Global Strategy for improving the agricultural and rural statistics, in it's framework will be implemented, including the task on defining parameters and indicators for food security monitoring (SDG 2), and - global warming, biofuels and environment.

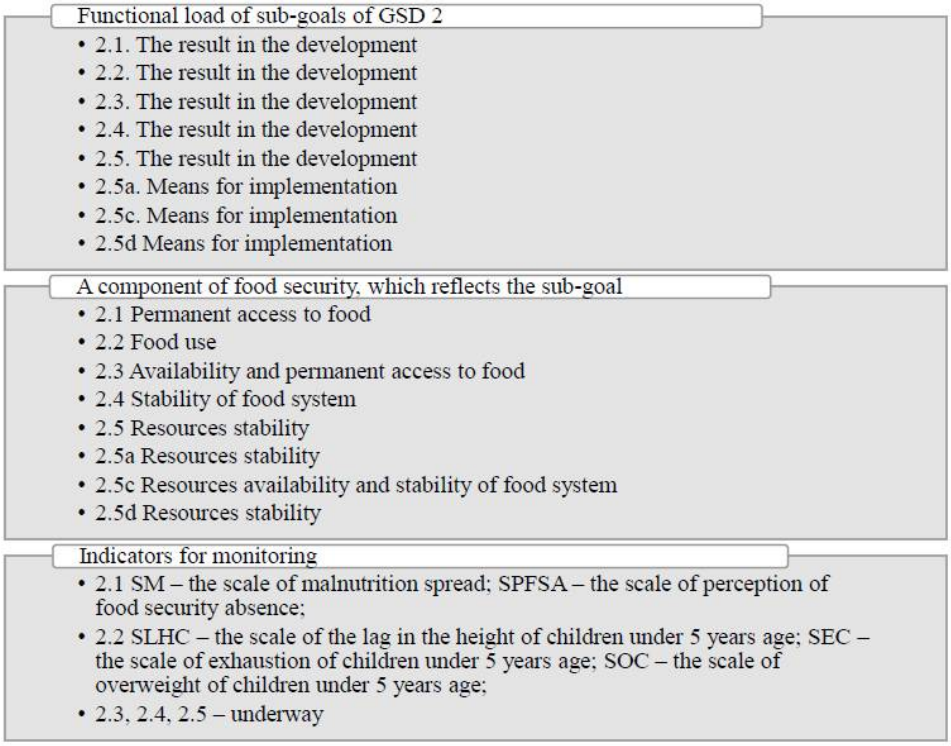

Fig 1. Monitoring of food security and nutrition (GSD 2) as part of a new global Agenda "The Goals of Sustainable Development – 2016-2030"
Source: formed by author (FAO, 2016)

The initiative of the Global Strategy creation, for improving the agricultural and rural statistics was a response to the decline in the quantity and quality of agricultural statistics. The purpose of the global strategy is to provide an access to national and international statistical systems to obtain baseline data for SDG monitoring.

The problems during conducting a comprehensive analysis of food security and nutrition indicators SDG 2, are not only the lack of a complete system of required indicators. Despite the obvious relationship, the spread assessment of malnutrition and food insecurity scales reflect different concepts, so these two measures can not be regarded as interchangeable or as having a clear correlation between countries. They give different, but complementary information.

Table 2. An essence, the objectives and methodical approaches to the assessment of indicators of food security and nutrition monitoring (SDG Target 2.1) under the new Global Agenda "Sustainable Development Goals - 2016-2030"

Indicator	Essence	Objectives	Methodological approaches to assessment
SM - the scale of malnutrition spread	An assessment of the proportion of individuals in the whole population (%) who consume insufficient amount of food	The indicator used by FAO from 1996 to monitor the achievement of the purpose set by the World Food Summit, and later the MDG 1c at national, regional and global levels. Currently used for monitoring of SDG 2 implementation	The indicator is calculated relative to population on basis of probabilistic distribution of the energy value of the normal daily diet of "middle man". The distribution parameters are estimated using available information about the national food offer, food consumption sharing by households or individuals, as well as the characteristics of the population, determining the need for food energy. The total probability of usual consumption for that average individual, which is below the lower limit of the normal range needs, adopted for evaluation of the SM
SPFSA - the scale of perception of food security absence	The evaluation of people's ability to get a food	Monitoring of SDG 2 implementation	Methods of SPFSA provides accurate and timely information on the ability of people to get a food, on basis of eight simple questions related to the types of behavior and experience, typical situations which limited the possibility of food obtaining. The combined set of answers to eight points of SPFSA, analyzed through the prism of rigorous methods of the theory of latent traits, allows to determine for each respondent the probability of belonging to any possible class of food insecurity, based on the scale of severity

Source: formed by author (FAO, 2016)

In studying the links between food security and nutrition is also important to remember that improving access to food by itself does not guarantee the improvement of child nutrition, as well as infections caused by lack of access to clean water, basic sanitation and health care, can lead to violations of the digestive system, which eventually leads to the increasing in the spread of exhaustion and stunting. In addition, defective food diets can lead to the growth of obesity and diet-related, non-communicable diseases that are increasingly distributed among the poor. It was found that obesity is associated with lack of food security in a number of adults groups and is associated with poverty. The coexistence of malnutrition and excessive eating significantly affected the countries that conduct rapid transformation, and lay them on the double burden of malnutrition [4]. These countries, in particular, also include Ukraine.

If the child is faced with food insecurity, most likely, it will lag in the height and suffer from disorders of the digestive system, which often precede irreversible consequences lag in height (Fram, M. S., Bernal, J. & Frongillo E. A. 2015; FAO, 2016). Regarding the relationship between personal experience of food insecurity and overweight among the children, the evidence compelling enough, although a range of other harmful consequences of food insecurity for children, including less healthy diets and negative psychosocial consequences, have been studied well (IOM, 2011).

With the adoption by the states of 2030 Agenda for Sustainable Development and increase of efforts to monitor expected data on food security and nutrition at national and regional levels, will be easier to accepted and widely accessible. This will facilitate the process of filling out of plural gaps in knowledge about the relationship between access to food and nutrition levels, and other factors of food insecurity.

Table 3. An essence and methodological approaches to the assessment of indicators of food security and nutrition monitoring (SDG 2) under the new Global Agenda "Sustainable Development Goals – 2016-2030"

Indicator	Essence	Consequences	Method of calculation
SLHC - the scale of the lag in the height of children under 5 years of age	The lag in height, defined as low height for age (deviation in height more than two points higher than the standard deviation from the median value in accordance with the Standards of height of children established by WHO)	Reflects the cumulative effects of undernutrition and infection during the critical 1,000-day period from pregnancy to the child's second birthday.	The ratio of children under five years who meet the criteria of lag in height, to the total number of children under five years
SEC - the scale of exhaustion of children under 5 years of age	The lag in weight gain, defined as low for age height (deviations in body weight relative to height, which is more than two standard points lowerthan standard deviation from the median value in accordance with the Standards of height of children established by WHO)	The exhaustion is a major prerequisite for mortality among the children under five years and usually occurs as a result of acute prolonged lack of food and / or diseases	The ratio of children under five years who meet the criteria of exhaustion, to the total number of children under five years
SOC - the scale of overweight of children under 5 years of age	The body weight excess, defined as excessive for their height (deviations in body weight relative to height, which is more than two standard points above the standard deviation from the median value in accordance with the Standards of height of children established by WHO)	Overweight in childhood is associated with a wide range of serious health complications and an increased risk of premature onset of illnesses, including diabetes and heart disease	The ratio of children under five years who meet the criteria for being overweight, to the total number of children under five years

Source: formed by author (FAO, 2016)

In Ukraine, monitoring and information support of the food security formation according to the draft of Law of Ukraine «On food security of Ukraine» (Zakon, 2011) should exercise authorized by the Cabinet of Ministers of Ukraine executive authorities, namely: providing the regular study of the food entering to the consumer market of Ukraine, and creating of appropriate information databank; creating of recommended food rations for basic social and demographic groups based on regional traditions and habits, environmental situation; carry out the calculations of predictive and actual state needs in main kind of food.

According to the draft of law, the food security formation process should be accompanied by monitoring wich organized by the nature of the changes and their quantitative and qualitative assessments to prepare appropriate guidelines and management decisions. The monitoring system is based on a combination of economic and social indicators with indicators that reflect the performance of public authorities to address food security problems. As a result of monitoring, authorized executive authorities, have to decide on changes in the food pannier for basic social and demographic groups, and executive authorities have to decide on the changes and approve food kits for the main social and demographic groups. Monitoring results are published annually on the official website of the Cabinet of Ministers of Ukraine, central authorities in branch of Agrarian and Food Policy, of Economic Development and Trade central authorities and at the media (Zakon, 2011).

By the Cabinet's of Ministers of Ukraine Resolution "Some Issues of Food Security" (Zakon, 2007), contained a list of tasks to the executive power to monitor indicators of food security of Ukraine at national, macro and micro levels:

1) To the Ministry of Health to determine every five years recommended by rational standards of consumption of basic products an average per one person;

2) To the Ministry of Agriculture and Food, the Ministry of Social Policy and State Statistical Service to provide within its authority submission to the Ministry of Economic Development and Trade every year until July 31, the information necessary to calculate basic indicators of food security;

3) To the Ministry of Economic Development and Trade to prepare and publish each year before 1st September of the next period report on food security state in Ukraine.

On the official website of the Ministry of Economic Development and Trade of Ukraine there is no report on food security in Ukraine for any period. Regarding food security published only the balance of demand and supply of meat and meat products, sugar, milk and dairy products, vegetable oils refined on 01.04.2015, the estimated balance of supply and demand of grain in 2014/2015 marketing year by all categories of farms.

In fact the indicators monitoring of food security exercise, mostly academics. Information process support as the system does not form any of the central authorities of Ukraine. Most of the food security indicators, approved by the Methodology for Determining the Key Indicators of Food Security, approved by the Cabinet of Ministers of Ukraine "Some Issues of Food Security" [9], available on the website of the State Statistics Service of Ukraine, but they are in different information sources, not structured and not are required interpretation to the public.

Conclusions. The information gaps are many, complicated by the limitations of the methods at our disposal and the considerable human and financial resources required to collect high quality data on a regular basis in all countries of the world. However, the commitment of FAO, IFAD and WFP is to significantly step up efforts to address the many inequalities at the root of hunger and food insecurity. As we move forward on the 2030 Sustainable Development Agenda, it will be important to work hand-in-hand with Member States to implement a monitoring process linked with decision-making and capable of building political will (FAO, 2016). Entering to the era of the SDG, we still have significant gaps in data and methodological difficulties which will be overcome in order to assess the food security and nutrition effectively and on time, and with the possibility of comparing data across the countries.

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