

Certain aspects of African countries food security provision

Lyudmila Kopteva^{1*}, *Lyudmila Shabalina*² and *Artur Budagov*¹

¹Saint-Petersburg State University of Aerospace Instrumentation, 67, Bolshaya Morskaya str., 190000, Saint Petersburg, Russia

²Donetsk National Technical University, 58, Artema str., 83000, Donetsk, Ukraine

Abstract. Analysis of the African countries food security demonstrate significant aggravation of the situation in several countries to the south of the Sahara. Conflicts, social inequality, high level of poverty against the background of a rapid population growth, unfavorable climatic conditions as well as ineffective government policy in the field of providing the population with foodstuff were determined as the main causes of population undernourishment. In Africa, due to low incomes of the population, most of the food ration consists of cereals and a small part of meat, fish and dairy products. It was revealed that African countries are the net importers of foodstuff, with cereals accounting for the largest part of imports. It was noted that international experts forecast foodstuff and fodder demand increase in these countries. It was defined the African region can potentially become one of the promising sales markets for Russian producers of grain crops and agricultural products. The results of the study are aimed at overcoming the problem of starvation, economic backwardness and improving the living standards of the African continent population, as well as developing an economic toolkit for the interaction of the Russian Federation with African countries.

1 Introduction

The food problem in many countries of the world persists, and in some of them it has seriously aggravated, which is associated with wars and conflicts, social inequality, as well as ineffective government policy in the field of providing the population with foodstuff. At the same time, it should be noted that the quantity of the world population suffering from undernourishment is increasing. So, in 2018, the number of people suffering from starvation made up 820 million people, which is 5.5% more than in 2015 [1]. The food security situation has negatively intensified in several countries in sub-Saharan Africa. At the same time, population growth in Africa is projected up to 2.5 billion people by 2050, which may lead to an increase of starvation [2]. According to FAO experts, in Africa as a whole, insufficient work has been carried out to meet the hunger targets set by the world community. This is especially evident in the sub-Saharan region, where the level of the population undernourishment increased from 21.7% to 23.2% in 2018 compared with 2010

* Corresponding author: luis63@mail.ru

[2]. In this regard, it is an increasing demand to analyze the food security of African countries, which will make it possible to determine promising directions for overcoming starvation, economic backwardness and improve the living standards of the population in this region.

2 Background

The issues of regulation and control of solving the world food security problems are handled by the Food and Agriculture Organization of the United Nations (FAO), International Food Policy Research Institute, International Fund for Agricultural Development, United Nations Conference on Trade and Development. Trends and specifics of starvation problem as well as issues of ensuring global food security were raised in the works of E.D. Kopnov, L.A. Rodionov, O.I. Botkin, L.G. Kotov, O.N.Safonov, V.A. Kovalenko, Niyazi A. and others. The analysis of the current state and prospects of foreign trade relations development between the Russian Federation and Africa was carried out by Zhurba M.V., Kemene S.M., Sapuntsev A.L., Korendyasov E.N., Avetisyan E.G. etc. Such economists as D. Bloom, D. Canning, K. Chan, M.A. Bulanakova, E.N. Novoselova, A.V. Lyadova have consecutively undertaken deep research on food security in Africa.

3 Results and discussion

The countries of the African continent are the least developed ones in the world, having one of the lowest levels of GDP per capita. So, for example, in South Sudan it makes 303 US dollars, which is the lowest rate among 186 countries in the world in 2018. The volume of GDP in Africa is 7.1 times lower than in developing countries in Asia. It should be noted the population density in Africa is 4 times higher, and the territory is 1.2 times less. The largest regions of the continent are North and West Africa, which account for 31.8% and 27%, of the region's total real GDP respectively. The largest countries in the region are Nigeria, South Africa and Egypt [3].

Among the eighty-six countries in the world that are identified as low-income and food-insecure, forty-three are located in Africa. Despite the fact the African continent occupies 20.4% of the world total land area and has significant reserves of natural resources, about 256.1 million people in African countries were determined as suffering from undernourishment in 2018 (Table 1). According to experts, the projected number of starving and undernourished Africans will increase to 300 million in 2020 [3].

Table 1. The rate of undernourishment in the world and in Africa (Based on FAO data [2]).

Territory	Indicator value					
	% of population			mln people		
	2010	2015	2018	2010	2015	2018
World	11.8	10.6	10.9	822.3	785.4	820.8
Africa. including:	19.1	18.6	20.4	199.8	217.9	256.5
North Africa	5	8	8.5	8.5	15.5	20
Countries in sub-Saharan Africa. including:	21.7	21.1	23.2	180.6	202.4	236.5
Central Africa	27.8	24.1	26.1	118.6	119.3	42.7
East Africa	31.3	30.5	31.4	36.5	37.9	132.2
South Africa	7.2	7.9	8.4	4.2	5	5.4
West Africa	10.4	11.4	15.1	31.9	40.3	56.1

It should be noted that even resource-rich countries in Africa are characterized by the high rates of undernourishment. For example, the Democratic Republic of Congo is

recognized as one of the poorest countries in the world, with a population of 77 million, most of whom live on less than US \$ 1.25 per day [4]. As a result, cereal crops are the staple foodstuffs for citizens due to their low income level, though African countries themselves are unable to provide sufficient quantities of mentioned crops as their agricultural development is at low level.

One of the factors affecting the food security of the region is population increase, which limits the growth of per capita incomes, causing poverty and starvation. In 2018 the population of Africa increased in 5.4 times compared to 1950, amounting to 1.2 billion people. It should be noted 11% decrease of the birth rate in African countries in 2018, counting 11.6 people, which is 64% higher compared to Europe. At the same time, life expectancy increased to 61.86 years, which, for example, is 25.44 years lower compared to Japan. One of the factors affecting this indicator is the quality and structure of food. In Japan, the diet is based on meat, fish, rice, soy, fruits and vegetables. The average annual consumption of fish and meat per capita in this country is 68 kg and 30 kg respectively, while in African countries the consumption of meat remains the lowest in the world, namely 14.2 kg [4].

In Africa, 70% of the food intake is grain crops, with a small share of meat, fish, dairy products, etc. (fig. 1). Despite the fact that the main products consumed are cereals, in the economic structure of African countries the service sector occupies the largest share, and agriculture accounts for 17.31%. In Africa, there are regional differences in food consumption composition. Thus, the largest amount of meat products is consumed in South Africa, which has grown by 7.5% over the past 7 years. The smallest number of calories consumed by the population is in Central Africa, which is heavily influenced by Angola and the Democratic Republic of the Congo, dependent on crude oil export. In South and West Africa, calorie consumption is almost 40% higher than in Central and East Africa, which is associated with the economic development of Botswana, Egypt, Morocco, South Africa and others. According to FAO forecasts, food consumption will increase by 5% in this region by 2025, and the bulk of the growth will come from the consumption of vegetable oil and sugar [3].

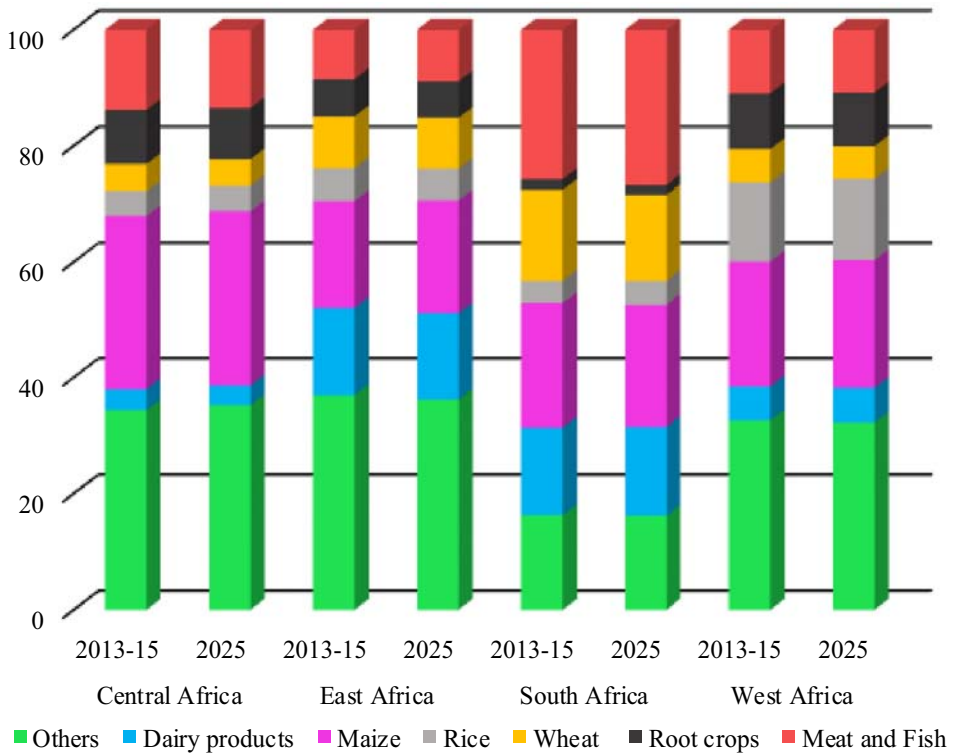


Fig. 1. Calorie intake per person in Africa, by country group (Based on the Global Food Security Index data [5]).

High level of undernourishment in Africa is caused by the combination of unfavorable climatic conditions and conflicts, often occurring simultaneously and from which a number of countries in the region are currently suffering. For example, 23 countries of the world faced a food crisis due to climatic and weather conditions in 2017. Moreover, two thirds of these countries are in Africa. Compared to 2012, the quantity of undernourished in countries vulnerable to drought increased by 45.6% (Table 2).

Table 2. Spread of undernourishment in arid and conflict-ridden African countries, mln people (Based on FAO data [2]).

Year	Quantity of undernourished	African countries involved in conflicts	Arid African countries
2010	199.8	95.6	74.4
2011	201.1	97.5	75.2
2012	203.2	99.6	76.9
2013	205.3	102.1	80.1
2014	210.2	105.4	85.6
2015	217.9	108.2	90.2
2016	234.6	116.8	99.8
2017	248.6	126.9	107.7
2018	256.1	131.6	112

In 2018, compared to 2015, the number of people undernourished increased by 34.5 million, 32.6 million of them live in sub-Saharan Africa and 1.9 million live in North Africa [2]. It should be noted that the prevalence of undernutrition in these countries is twice higher in comparison to that in conflict-affected countries (Table 2). For all countries

in sub-Saharan Africa, securing food availability while tackling climate change and environmental degradation are major challenges, as lack of foodstuff itself can trigger new conflict.

Conflicts often become one of the problems that lead to undernutrition and starvation. For instance, as a result of the inter-ethnic conflict in Darfur (Sudan) in 2003, the food supply of the population was worsened significantly, that led to death from starvation and diseases of more than 180 thousand people in 2004-2005 [3]. To resolve the crisis in the region, under the auspices of the UNO in cooperation with the African Union a special program was performed in 2007, thanks to which the country overcame humanitarian catastrophe.

It should be noted that Africa is a net importer of food. In 2018, the amount of imported goods in the region made up totally \$ 573.4 billion, export accounted to \$ 497.2 billion. Thus, the maximum level of product import was fulfilled in North Africa and made up \$ 222.7 billion, and in West Africa import amounted to 114,1 \$ billion, the minimum level was registered at the Central Africa and made up \$ 36.3 billion. At the same time, about 40% of all imported goods was initiated from three countries, they are South Africa, Egypt and Morocco. In the regional context, the highest value of the export indicator was in North and South Africa, and the lowest was in East Africa. The main exporting countries were South Africa, Nigeria and Angola, which accounted for about 30% of all African export (Table 3). Over the past five years import of the consumer goods to South Africa have grown by 70% and now accounts for over 40% of the region's total import.

Table 3. The largest African importing / exporting countries, US \$ billion (Based on the Roscongress Foundation data [6]).

№	Country	Year					Country's share in total African import / export in 2018
		2014	2015	2016	2017	2018	
Import							
1	South Africa	98.9	84.3	85	93.3	93.4	16.3%
2	Egypt	70.5	57.2	50.1	80.8	81	14.1%
3	Morocco	46.2	32.7	33.2	51.2	51.3	8.9%
4	Algeria	58.6	50.7	44.6	48.6	48.8	8.5%
5	Nigeria	61.6	52.3	36.4	36.2	36.5	6.4%
6	Tunisia	23.4	19.1	17.8	20.9	20.9	3.6%
7	Kenya	17.6	15.6	16.3	17.4	17.4	3%
8	Angola	29.2	21.2	19.7	16.3	16.4	2.9%
9	Libya	20.4	11.2	9.6	12.4	12.8	2.2%
10	Ghana	14.6	13.5	13.7	12.0	11.9	2.1%
Export							
1	South Africa	92.5	81.6	83.2	94.3	94.4	19%
2	Nigeria	82.6	45.9	33.3	52.6	52.9	10.6%
3	Angola	60	35.6	30	41.8	42	8.5%
4	Algeria	63.2	36	26.9	41.4	41.6	8.4%
5	Libya	16.5	10.9	10.7	30.1	30.7	6.2%
6	Egypt	26.2	19	14.7	29.3	29.4	5.9%
7	Morocco	23.7	18.5	18.7	29.2	29.3	5.9%
8	Ghana	13.2	10.4	10.3	16.9	17.1	3.4%
9	Tunisia	16.8	14.1	12.9	15.9	16	3.2%
10	Cote d'Ivoire	12.8	12	11.7	11.9	11.8	2.4%

According to the FAO experts forecast, in sub-Saharan Africa an increased demand for import of cereals, namely wheat and rice, is expected by 2028. Demand for foodstuffs and

feedstuffs is also forecasted to increase by an average 14 million tons of each. As cereals consumption in developed countries will remain stable due to slower growth in feed demand, African countries are expected to account for a significant share of additional consumption (Figure 2).

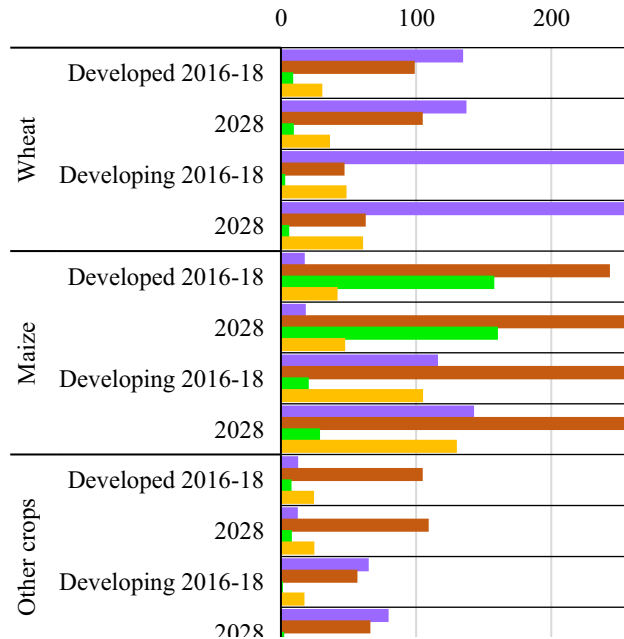


Fig. 2. Consumption of cereals in developed and developing countries (Based on Global Food Security Index data [5]).

The food market of African countries is becoming one of the most promising areas for the Russian Federation. Recently, the Russian Federation has become one of the main trade partners for this region. In 2015 - 2017 there was a significant increase in import, which is associated with the expansion of the demand for food, but the increase in calorie consumption per capita in the region, as shown by the analysis, remains insignificant. In 2018, the trade turnover between the Russian Federation and African countries reached 20.4 billion US dollars, while there was a decrease in the growth rates of import and export, which amounted to 18.1% and 11.1%, respectively (Fig. 3), the reason for which is the aggravation of military conflicts on the continent.

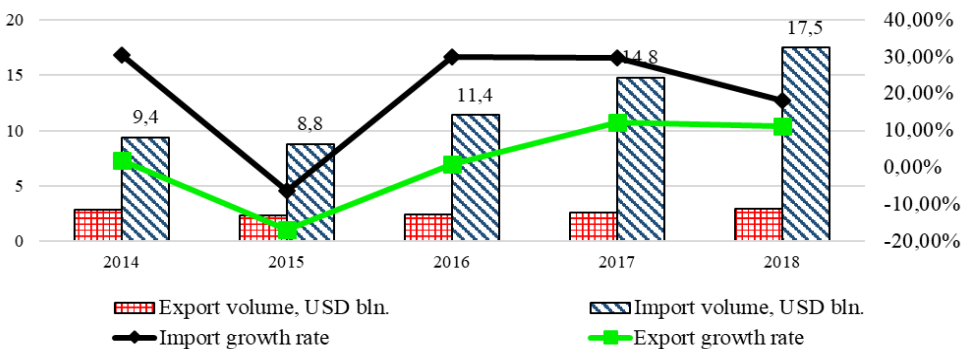


Fig. 3. Dynamics of export and import to African countries from the Russian Federation (Based on Federal Customs Service of the Russian Federation data [7]).

The main commodity structure items of African countries' exports to the Russian Federation are vegetables and fruits, nuts, cocoa, root crops, tobacco and inorganic chemicals, as well as ores. These groups account for about 69% of all African countries' export to the Russian Federation. In addition, the export of precious metals and stones, as well as copper, increased by 35 and 8 times respectively in 2018 [6]. Currently about 75% of all Russian exports to African countries fall on four commodity groups: grain, fuel, ferrous metals and different types of floating vessels, most of which are supplied to Egypt and Algeria [6]. Since the demand for these groups of goods is increasing due to the desire of African countries to overcome the problem of undernutrition and starvation, the supply of these goods is having good prospects for the Russian Federation.

4 Conclusion

Based on analysis of the food supply of African countries, it is determined the situation has aggravated considerably in a number of countries in sub-Saharan region. It was revealed, about 256 million people suffer from undernourishment in Africa, and the main causes of undernutrition are conflicts, unfavorable climatic conditions, high level of poverty and rapid population growth. Africa is proved to be the net importer of the foods, an increase in demand for cereals and agricultural products in this region is expected to rise. The analysis of foreign trade relations between Africa and the Russian Federation reveals African countries to be promising sales market for the Russian producers of grain and agricultural products.

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