UDC 338.43 (671.1)

## CHITCHUI TOUMENI ARMAND ANACIET

Bila Tserkva National Agrarian University

## MODERN TRENDS IN AGRICULTURAL DEVELOPMENT IN CAMEROON AND WAYS TO ENSURE ITS SUSTAINABILITY

It has been established that agriculture is the backbone of Cameroon's economy, where $80 \%$ of the labor force is engaged in the agricultural sector and provides $22.3 \%$ of gross domestic product and $30 \%$ of its export revenues. The investigated branch forms the commodity supply of agricultural products both on the domestic and foreign markets, the following types of products: cocoa, coffee, cotton, bananas, palm oil, tobacco, tea, pineapple, corn, millet, sorghum, yams, potatoes, beans and rice. It has been determined that the livestock sector has been developed throughout the country and plays an especially important role in the northern region of the country.

It has been proved that the main goal of the country's agricultural development is to ensure food security, whose achievement is strongly influenced by globalization of climate change. For the country under study, the country's orientation towards a "product concept" is characteristic, in which the main objective is to ensure the physical and economic availability of agricultural food. The strategic priorities in the country's agricultural development, which include the mobilization of local resources for intensive production taking into account environmental requirements, are highlighted.

It is substantiated that today specialized regions have been formed in relation to the production of certain types of products, which allowed to increase the productivity of agricultural crops. It is noted that there are differences in indicators of productivity of agricultural production in farms and research stations, which proves the existence of unused reserves for improving production efficiency. The characteristic features of development of agricultural production of the country are systematized: low level of technical support; a manifestation of the tendency to increase the land of farms; the prevalence of small commodity producers; low income farmers; predominance of informal economic relations; use of manual labor; complicated access to loan financing sources; low level of involvement of commodity producers in value added chains.

It is proved that under conditions of intensification of investment activity in the country's agriculture and realization of the foreseen measures of the strategic national plan, conditions and preconditions for effective development, modernization of production infrastructure, access of farmers to sources of financing and other components of sustainable development will be formed. It is highlighted that one of the conditions for the sustainable development of agriculture in the country is the intensification of agricultural production, which will promote ecological and social sustainability. Important instruments for its achievement are technological innovations in the direction of introducing new or improved agro technology of cultivation and modern management practices, new breeds of farm animals and poultry, integrated practices for improving soil fertility and widespread replacement of manual labor. Innovative solutions need to be coordinated with the specifics of the production process, and in terms of environmental and water and energy intensity.

Key words: agriculture, food safety, farmer, innovation, investment attractiveness.
doi: 10.33245/2310-9262-2019-148-1-21-29
Problem statement and analysis of recent research. Agriculture of Cameroon is one of the leading industries, since more than $70 \%$ of the working population is involved in this industry. Taking into account the fact that about $80 \%$ of the labor force employed is engaged in the agricultural sector, in 2013, it produced approximately $22.3 \%$ of gross domestic product (GDP) in Cameroon. In addition, the agricultural sector is responsible for providing food security for both rural and urban population in Cameroon through local production. Despite the accelerated population growth, there is increasing pressure on natural resources. According to researches, the low level of capital investment and the prevailing low level of government subsidies (for example, the purchase of quality seeds, fertilizers and herbicides), the production of agricultural products and foodstuffs per capita declined by $22.9 \%$ and $12.8 \%$, as a result of population growth. As a consequence, such a tendency should be expected due to difficulties in providing food for the population of the country, the number of which today is more than 23 million people. The deterioration of the country's food security situation could be expected in the near future as there is a negative effect of climate change on agriculture today and in the future. According to preliminary estimates by experts on climate change, there is a high level of drought in Cameroon, which might have devastating effects. Obviously, such globalization of climate change in the country will increase the risks of long-term food security.

The evolution of the concept of food security, which focuses on increasing the volume of production of quality agricultural products and food, as well as the expansion of the food assortment, today takes into

[^0]account numerous nutritional problems of the population, namely: quantity, quality, availability, identity, stability, etc.). This problem is also relevant for Cameroon. The results of scientific studies emphasize that the country's orientation towards a "product concept", which requires food security to be more accessible and, therefore, requires increased productivity and efficiency of agricultural production. This approach appeared during the financial crisis of 2008 in the form that envisaged the activation of innovative provision of production potential, but limited by environmental and social external factors. The following approach is based on the multidimensional understanding of food security, which promotes the ecologization of production functions in the food industry. This approach is based on the mobilization of local resources and envisages the change of the innovative model of the production base of agriculture and food taking into account the restrictive ecological parameters, which will allow to realize the potential of agro-systems for ensuring food security.

At the same time, when considering food security issues in African countries, including Cameroon in the vast majority of it is associated with political aspects. At the same time, most researchers of this issue associate it with the understanding of Olivier de Schutter, the UN special rapporteur on human rights for food, who emphasizes the physical and economic availability of food, as well as its adequacy. At the same time, scientists point out that stakeholders in food security are: direct producers, groups of civil society, governments, multilateral and bilateral partners, who should have similar approaches to understanding food security.

One of the important indicators of the economic availability of food is the level of food prices. Obviously, the volatility of food prices often serves as one of the fundamental characteristics of agricultural markets. The results of individual studies show that the volatility of food prices in the Cameroonian agricultural markets is the result of the influence of internal factors, as well as external, coming from the world market. It is confirmed that there is a general tendency to assert the increase in volatility of food prices, which is explained by the fact that the country imports cereal crops is influenced by the presence of their potential substitutes in the country. In addition, the volatility of food prices in Cameroon is determined by fluctuations in prices for other agricultural and non-agricultural products, rather than external factors such as instability of oil prices, grain crops, etc. Consequently, important tools for ensuring the stability of food security of the country, that is, minimizing the impact of instability of food prices, namely: development and improvement of existing strategic agricultural and food development programs, promotion of investment projects supporting local food production, which will promote import substitution of food, and the development of transport infrastructure in rural areas. Consequently, the relevance of the study is contemporary trends in the development of agriculture in Cameroon and the justification of strategic approaches to improving agricultural practices to ensure sustainable development of agriculture, as well as to increase the production capacity of the food industry, which will enhance the country's food security.

The aim of the study is to summarize the current trends in the development of agriculture in Cameroon, to determine the role of agricultural production in achieving the country's economic and food security, as well as to substantiate the directions of ensuring sustainable development taking into account globalization of climate change and socio-economic development.

Material and methods of research. The study uses the statistics of FAO (Food and Agriculture Organization) and the World Bank, data from the Ministry of Agriculture of Cameroon. In the course of the research, the method of system analysis of the economy of agriculture was used, as well as the method of comparative, historical and sociological analysis. Methodological basis is a theoretical and empirical approach to achieving research objectives.

Research results. The Republic of Cameroon is a country with enormous natural resources and a population of 22.8 million people. Today, this country is considered by the World Bank as a low-income country with a high poverty rate. At the same time, there is enormous potential for economic growth and poverty reduction in Cameroon, however, despite more than a decade of economic growth, poverty in the country remains almost unchanged. It should be noted that the highest poverty rate is most characteristic of the rural population and concentrated more in the northern part of Cameroon.

Cameroon is one of the developing countries that has been severely affected by the food crisis. At the same time, agriculture occupies a strategic place in the national economy, which in 2015 provided $\$ 5$ billion. US foreign exchange earnings provide social stability, food security, poverty reduction and gross domestic product (Table 1).

Table 1 - Dynamics of the share of gross domestic product of agriculture in Cameroon

| Years | Agriculture, \% of the country's gross domestic product | Annual rate of GDP growth, \% |
| :---: | :---: | :---: |
| 1995 | 23,6 | 4,1 |
| 1996 | 23,6 | 4,9 |
| 1997 | 24,7 | 5,3 |
| 1998 | 25,3 | 4,9 |
| 1999 | 24,4 | 4,1 |
| 2000 | 22,1 | 4,2 |
| 2001 | 22,2 | 4,5 |
| 2002 | 22,1 | 4,0 |
| 2003 | 21,7 | 4,0 |
| 2004 | 20,4 | 3,7 |
| 2005 | 20,6 | 2,3 |
| 2006 | 21,0 | 3,2 |
| 2007 | 22,9 | 3,3 |
| 2008 | 23,4 | 2,9 |
| 2009 | 23,5 | 1,9 |
| 2010 | 23,4 | 3,3 |
| 2011 | 23,6 | 4,1 |
| 2012 | 23,2 | 4,6 |
| 2013 | 22,9 | 5,6 |

Source: Ministry of Agriculture.
The given data in Table 1 show that during the research period, the share of gross domestic product of agriculture in the total GDP of the country did not significantly fluctuate and amounted to $22.9 \%$ in 2013. At the same time, the positive trend is a rather high rate of growth of the value of gross domestic product of agriculture, which during the study period increased by 1.5 percentage points and amounted to $5.6 \%$ in 2013. This allows us to conclude that in the country due to various factors, conditions and preconditions for increasing agricultural productivity are created.

At the same time, the results of scientific research prove that crop yields in Cameroon since 1961 have been increasing, but there is also a food price crisis in the country. In this regard, social concerns about the country's ability to satisfy the food needs of the population are increasing, which requires an increase in the efficiency of utilization of agricultural production potential. In addition to the positive trend of increasing crop yields, it is also highlighted that crops are cultivated in the regions that are most suitable for this. However, there are significant discrepancies between the yields of farms and the values of the yields of research stations in the country, on the basis of which it is concluded that, respectively, the innovative provision of the process of cultivating crops and the state policy in agricultural regulation cause yield decline.

For agriculture in Cameroon, at the current stage of development, the development of flexible adaptation tools for globalization of climate change is an important issue. Scientists note that the study of the issue of water accumulation as a strategy for adaptation to the current variability of the external environment of the functioning of the industry and climate change have not really been actively studied, especially in the northern regions of the country. There is a shortage of water and climate variability in this region, requiring the introduction of effective measures to collect water for water security, both for domestic and agricultural purposes. The authors argue that the temperature in the studied region remains unchanged, but rainfall has decreased; although rainfall is much higher compared to other regions with little or no water problem. It should be noted that Cameroon has intensified the processes of urbanization over the last few decades, which is raising the issue of improving the needs and services in the healthcare, educational infrastructure and diversification of life, but degradation of forest and agricultural land is observed. By 2030 two of the three Cameroonians will live in cities, causing a new dynamic in the field of food security. At the same time, countrywide seasonal fluctuations in the quantity, availability and diversity of food products across the rural and urban populations were seen, access to food for urban households was significantly higher.

It is known that one of the attributes of agricultural production, in particular in the western and north-western regions of the country, is the development of cooperation, which began with the advent of European colonizers at the end of the nineteenth century. The fertile soils of this region contribute
to agricultural activity, thus contributing to the development of cooperatives in the region. Cooperative societies that have been established in these regions are typical of sub-Saharan Africa. The positive changes in the development of agricultural cooperatives in the country lead to the introduction of innovative approaches that allow this organizational form of management to adapt flexibly to uncertainty and constraints in economic activity.

The specificity of agricultural production in Cameroon is that the average level of technical support is $67 \%$, which indicates the possibility of a significant increase in the volumes of production of agricultural products and food. Studies have shown that manure in agricultural production is the factor with the highest return, and then the technical resources and labor force. A positive aspect in the development of agricultural production is that the increase in the average size of farms is their technical support.

Most agricultural producers are small farmers. The most important crops produced include bananas, cassava, corn, potatoes, millet and sugar cane. These crops are cultivated in agricultural systems, in conjunction with the cultivation of cattle.

Agriculture is the backbone of Cameroon's economy, which employs $70 \%$ of the workforce and provides $44 \%$ of its gross domestic product and $30 \%$ of its export income. Table 2 provides information on types of agricultural products produced by Cameroon for export and domestic consumption. Livestock breeding has developed throughout the country and is particularly important in the northern region.

Table 2 - Major crops and species of animals grown in each agro-ecological zone of Cameroon

| Agro-ecological zone | List of species of agricultural crops and animals |
| :--- | :--- |
| Sudanese-Sahelian | Corn, millet sorghum, rice, honey, soybeans, onions, sesame seeds, fruits, cotton, cattle and <br> small ruminant |
| High Guinea Savannah | Corn, Yams, Cassava, Sweet Potatoes, Rice, Cotton, Cattle, Pig, Small Ruminants, Bird <br> Birds |
| West Highlands | Corn, beans, potatoes, rice, sweet potatoes, vegetables, coffee, pigs, poultry, cattle, small <br> ruminants, fish farming |
| Mono modal damp forests | Banana, plantain, cassava, cocoa, sweet potatoes, corn, vegetables, cocoa, coffee, palm oil, <br> rubber, fruit, poultry, pig, poultry, small ruminants, fish farming |
| Bimodal wet forest | Plantain, cassava, banana, corn, cocoa, sweet potatoes, cocoa, palm oil, rubber, coffee, corn, <br> cocoa, palm oil, fruit, poultry, pig, fish, small ruminants |

Source: Summarized by the author.
It was established that in 2014 the country adopted a strategic national plan for investments in agriculture in 2014-2020. The priority directions of this investment plan are: promoting the development of the agricultural sectors (plant growing, animal husbandry, fish farming); modernization of production infrastructure in rural areas and improvement of access mechanisms for financing; management of sustainable use of natural resources; stimulating investors in rural development and promoting cooperation among all stakeholders.

In addition, Cameroon adopted the National Strategy for Innovative Development of the Rice Industry, which focuses on increasing the productivity and competitiveness of rice production on the basis of reduction of production restrictions. Priority areas include: supporting the acquisition of material and technical resources by commodity producers; expanding of growing areas on irrigating lands and restoring of irrigation infrastructure; improving the skills of commodity producers in the use of intensive technologies and supporting the modernization of capacities for the processing and marketing of rice. A generalized description of the features of investment activity in agriculture allows us to obtain the data presented in Table. 3.

Table 3 - Dynamics of investments in agriculture of the country

| Years | Percentage of total <br> national investment, $\%$ | Years | Percentage of total <br> national investment, $\%$ |
| :---: | :---: | :---: | :---: |
| 2003 | 0,07 | 2008 | 0,038 |
| 2004 | 0,11 | 2009 | 0,043 |
| 2005 | 0,07 | 2010 | 0,03 |
| 2006 | 0,062 | 2011 | 0,063 |
| 2007 | 0,044 | 2012 | 0,06 |

Source: Ministry of Agriculture.

The data presented in Table 3 convinces that agriculture in Cameroon is not investment-friendly and, accordingly, its low efficiency and competitiveness are also due to this feature. We believe that in case of intensification of investment processes in the investigated branch in the near future one should expect increase of productivity of agricultural production due to innovative upgrade of production potential.

Green Innovation Centers (GICs) have been created as part of the "One World, No Famine" Initiative, an important instrument for sustainable agriculture in Cameroon. The purpose of these centers is to promote innovation in agriculture, to increase the safety of agricultural products and food, and to develop sustainable value-added chains in the country's agricultural sector. It should be noted that, like most African countries whose economies are heavily dependent on the agrarian sector, Cameroon has targeted strategic programs and agrarian policies that are consistent with those established by the African Union and other organizations to which the country belongs.

Despite the fact that the country signed the Africa Agricultural Development Program in 2013, $10 \%$ of target expenditures are still not met. Consequently, due to the budget deficit, the country has insufficient financial resources to support agricultural development, ensure food security, increase productivity and competitiveness of strategic agricultural products.

At the same time, the country is a member of the Central African Economic and Monetary Community and the Economic Community of Central African States, which approved the Common Agricultural Policy for the region on October 22-23, 2014. The main purpose of the Economic Community of the African Union is to promote regional economic cooperation in Central Africa. The country is also a member of the Association, an important organization in the Central African region - the Interstate Committee on Pesticides of the Central African Region, which was established to minimize the negative impact on the environment and animal health of the use of herbicides, pesticides, and fertilizers. The main tasks of the organization are: carrying out a joint procedure for registration of pesticides; assuring the quality and safety of agricultural products and food; substantiation of alternatives to the use of hazardous chemical preparations; conducting analysis of pesticides.

In our opinion, the implementation of the long-term development plan of the country "Vision 2035", designed to achieve the following development goals: poverty reduction; raising the level of average income and creating a new modernized country; the spread of democratic principles, etc., will have a positive impact on the socio-economic development of Cameroon. So, today, the country is implementing phase 1 (2010-2019) of this program, which seeks to achieve the goals of modernizing the economy and accelerating economic growth, and has the following targets: increasing productivity, which means the need to address urgent issues in the following crisis sectors: food, energy, finance, job creation, increasing the investment attractiveness of the digital economy, reducing poverty by $25 \%$, and improving the business climate in the country and corporate governance.

In addition, the government, in collaboration with numerous international research organizations and funds, focuses on developing measures to increase agricultural productivity. It should be noted that the instruments primarily include mitigation of restrictive factors in the efficient development of the industry and the provision of food security of the country on the basis of an increase in the volume of agricultural production. In order to achieve the goals set by the government in 2015, trains were conducted for 30 thousand farmers in 35 agricultural centers. In addition, the government provides for the creation and operation of more private and public institutions of higher education for the training of specialists in the field of plant growing, plant protection, agrarian economics and food technologies. Since 2009, the government has developed a plan for provision through the Ministry of Agriculture and Rural Development, farmers for quality planting material for the cultivation of rice, plantain, corn, fruit trees, beans, increasing the amount of subsidies for the purchase of pesticides and fertilizers from 20 to $50 \%$ of their value, loans at low interest rates, up to $15 \%$ in the purchase of agricultural machinery and production equipment for processing, storage and packaging. An important role is allocated in increasing the production of scientific support and information support of managerial decisions of farmers by the National Agricultural Advisory Council and the expansion of scientific research in the field of agriculture.

The given indicators of Table 4 characterize the role of agriculture in the country in the economy as a whole and the provision of food and economic security. The data presented in Table 4 suggest
that there is an extremely high level of poverty in the country, which undoubtedly affects the economic availability of food, a high level of employment of the population in agricultural production, proving its extensive development, and, accordingly, difficulties in ensuring the principles of sustainable development of rural areas.

So, as the above arguments show, the issue of food supply to the population of Cameroon is extremely acute. It is established that the daily caloric content of the diet in 2014-2016 on average is 2625 kcal. per capita, which is $18 \%$ higher than the norm. However, one tenth of the population of the country is not able to meet its own minimum nutritional needs and suffers from chronic malnutrition. It should be noted that the main sources of food supply in Cameroon are cereals (especially corn, sorghum and rice) and starchy roots, mainly maniocos. Important products in the country's diet are also vegetable oils, fruits, beans and nuts, starchy roots.

Table 4 - Key indicators of socio-economic development of the country and agriculture

| Indexes | Indicator value | Year |
| :--- | :---: | :---: |
| 1. Population, million people. | 22,818 | 2014 |
| 2. Average annual growth of population, $\%$ | 2,5 | 2014 |
| 3. Rural population, $\%$ of total population | 46 | 2014 |
| 4. Gross domestic product, per capita, USD. USA | 2829 | 2014 |
| 5. Domestic national income per capita, USD / USD | 2803 | 2014 |
| 6. Poverty (\$ 2 per day), \% of population | 53 | 2007 |
| 7. Poverty (\$ 1.25 per day), \% of population | 28 | 2007 |
| 8. Poverty at the national level, $\%$ of the population | 40 | 2007 |
| 9. Poverty rate of rural population, $\%$ of population | 55 | 2007 |
| 10. Agricultural land (\% of total area) | 21 | 2012 |
| 11. Value of added value of agriculture per worker, USD USA | 1264 | 2014 |
| 12. Share of value added of agriculture in GDP, $\%$ | 23 | 2014 |
| 13. Share of electrified rural areas, $\%$ | 19 | 2019 |
| 14. Percentage of women working in agriculture, from the total number, $\%$ | 58 | 2010 |
| 15. Percentage of men employed in agriculture, in total, $\%$ | 49 | 2010 |
| 16. Percentage of employed in agriculture, from the total number, $\%$ | 53 | 2010 |
| 17. Level of education, $\%$ of the number of people over 15 years of age | 71 | 2010 |

Source: World Bank data.
It is known that the most important agricultural crops in the aspect of food security in Cameroon are corn, rice, sorghum, tubers (mainly manioc, yams and taro), fruits, peanuts, bananas and bananas, coffee, cocoa and palm oil. Satisfaction of the needs of the population of the country in meat and meat products is ensured by the production of cattle cattle (cattle) and poultry. It should be noted that more than two thirds of farmers ( $68 \%$ ) are engaged in the cultivation of at least three main crops (corn, peanuts and vegetables). A group of farmers cultivating only one culture, in most maize (16\%) of the three most common crops.

Livestock farming is also an important industry for farmers, where $57 \%$ of farmers engage in the cultivation of such species: poultry ( $80 \%$ ), goats ( $47 \%$ ) and sheep ( $25 \%$ ). Only $19 \%$ of livestock breeders are raising cattle and pigs. The study found that most agricultural products are sold in food markets $(80 \%)$, of which $51 \%$ is sold directly to the consumer and $29 \%$ to intermediaries or agents. We believe that expanding access to markets can help increase farmers' incomes.

It should be noted that for two out of five adults ( 6 million people) income is generated in the field of agriculture. However, the farmers' monthly income is very low and is about $\$ 6.32$ a day. Diversification of sources of income outside agriculture is limited to only $6 \%$ of adult Cameroonians who use agriculture as a secondary source of income.

A significant proportion of farms are engaged in agricultural production for own consumption. Thus, out of $62 \%$ of households involved in agriculture, $24 \%$ are purely natural, $2 \%$ commercial, and $75 \%$ consume and sell their products. Thus, agriculture in Cameroon for the majority of the country's population allows self-reliance to be provided at the expense of food self-sufficiency and the formation of at least small incomes.

Considering the peculiarities of the development of agricultural production in rural households, it is characterized by small size of land plots, the prevalence of informal economic relations; use of manual labor of family members; natural exchange, due to the underdevelopment of market infrastructure, increased access to borrowed financing sources; low level of involvement of commodity producers in value added chains. Yes, only $23 \%$ of households use official payments; $3 \%$ rely on remittances as a source of income and $2 \%$ use legal sources of credit, and $3 \%$ prefer informal lending.

It is established that the distribution of land sizes among farms is typical for agricultural production in the region of the African continent. Yes, there is a predominance of small farmers ( $51 \%$ ) who own less than 3 hectares of land. At the same time, $35 \%$ of farmers have 3 to 10 hectares of land, and $14 \%$ have more than 10 hectares of agricultural land with more than 10 hectares in cultivation. There is an increase in the area of agricultural land only in $37 \%$ of farmers, which are guided by the expansion of commercialization of agricultural activity. Interestingly, the level of availability of relevant land tenure documentation is very low. Thus, $70 \%$ of farmers work on land owned by them, but only $16 \%$ of them have a recognized official property or a document on the right to own land.

The results of the analysis indicate that $22 \%$ of households in Cameroon grow their own products. Of all farms, $75 \%$ of consumers use and sell grown products, while only $2 \%$ of farms are fully commercialized. Of the $75 \%$ that are mixed, three quarters produce mainly for their own consumption. We believe that such a situation is caused by a lack of capital for the formation of material and technical resources and the lack of sufficient land area. In addition, a constraining factor for ensuring the efficient production of agricultural products is that only $8 \%$ of farmers receive formal training or technical assistance in agriculture, livestock farming and fisheries.

Discussion. According to the results of the study, it was established that the most important challenge for the country's agriculture is to ensure food security by minimizing and neutralizing climate risks through the introduction of sustainable development principles. One of the prime conditions for the sustainability of agriculture is the intensification of agricultural production, which will promote ecological and social sustainability. Technological innovations such as new or improved agrotechnologies and management practices, new breeds of farm animals and poultry, integrated practices for soil fertility and manual labor replacement are important. In order to justify effective tools for improving the efficiency of agricultural production, it is necessary to investigate in detail the issue of resource supply and level of use, the specificity of agrotechnics on the part of its environmental and water and energy intensity.

Conclusions. This study systematized the main indicators of agricultural development in Cameroon, its role in ensuring the principles of sustainable development in the socio-economic and environmental aspects, and the formation of an appropriate social infrastructure in rural areas. It has been proved that agriculture makes a significant contribution to food security and the formation of a high level of employment for the rural population. One of the most important challenges for the country as a whole is increasing food security, which requires an increase in agricultural production on the basis of observance of the principles of sustainable development. That is why for the country's agricultural sector it is important to increase the productivity of agricultural crops and animal productivity, which can be achieved on the basis of intensification of innovative farmer's processes. The solution of the above issues is addressed in the adopted strategic development programs of the industry and the country as a whole, but the limited financial resources of the state, on the one hand, and the other high poverty rate of farm households, do not allow to modernize the production base of agriculture and its efficiency and competitiveness.

In addition, the impact of global climate change, which requires scientific development and support in adapting livestock breeding and livestock husbandry technologies to growers, will be affected by the long-term development of agriculture. At the same time, it is advisable for the farmers of Cameroon to intensify the explanatory work on changing the understanding of the principles of sustainable development, since most of the innovations are evaluated by them and, accordingly, statistical information is produced by farmers and at the country level in terms of food security and the level of economic output. However, the impact of innovations is observed not only in the abovementioned directions, but also on the environment, incomes of farm households, etc., which requires, respectively, the formation of a relevant array of statistical information in these areas.

We believe that promising directions for studying the peculiarities of agricultural production in Cameroon should be research into identifying factors that promote and restrain efficient production, innovation and marketing provision of farmers, and the development of elements of market infrastructure.

## REFERENCES

1. Boko M. I., Niang A., Nyong C., Vogel A., Githeko M., Medany B., Osman-Elasha R., Tabo, Y. and Yanda P. (2007). Africa Climate Change: Impacts, Adaptationand Vulnerability; Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge UK, pp. 433-467.
2. Temple L., Touzard J.M., Kwa M., Boyer J. (2015). Comparison of innovation paths for food security in countries of the South. Biotechnology, Agronomy and Society and Environment. Vol. 19. Issue 1, pp. 53-61.
3. Sneyd A., Legwegoh A.F., Sneyd L.Q. (2015). Food politics: Perspectives on food security in Central Africa. Journal of Contemporary African Studies. Vol. 33. Issue 1, pp. 141-161.
4. Kane G.Q., Piot-Lepetit I., Ambagna J.J., Tene G.M., Fondo S. Determinants of food price volatility in Cameroon. Cameroon in the 21st Century: Challenges and Prospects. Governance and Businesses1. January 2017. Vol. 1, pp. 101-152.
5. Piot-Lepetit I. (2017). Cameroon in the 21 st century: Challenges and prospects. Governance and businesses. Moisainra. Department of Economics, Economics and Management Division. Montpellier. France. Vol. 1, pp. 101-152.
6. Yengoh, G., Ardo, J. (2014). Crop yield gaps in Cameroon. Ambio. Vol. 43. Issue 2, pp. 175-190. Available at:http://doi 10.1007/s13280-013-0428-0.
7. Cheo, A., Amankwah, E., Techoro, P. (2014). Water Harvesting: A Potential Means for Water Security in the Far North Region of Cameroon. Agricultural Research. Vol. 3. Issue 4, pp. 331-338. Available at: http://doi 10.1007/s40003-014-0133-7.
8. Kamga R., Fleissner K., Tenkouano A., Afari-Sefa, V., Rosine Nana F. (2017). Household perceptions with respect to food security: Evidence from the rural-urban continuum in Cameroon. Journal of Integrative Agriculture. August Vol. 16. Issue 8, pp. 1865-1873.
9. Jiotsa, A., Okia, T., Yambene, H. (2015). Cooperative movements in the Western Highlands of Cameroon: Constraints and adaptation strategies. Revuede Geographie Alpine. Vol. 103. Issue 1. 13 p. Available at: http://doi10.4000/ rga. 2764.
10. Ajapnwa, A., Bidogeza, J., Minkoua, N., Afari-Sefa, V. (2017). Efficiency and productivity analysis of vegetable farming within root and tuber-based systems in the humid tropics of Cameroon. Journal of Integrative Agriculture. August Vol. 16. Issue 8, pp. 1865-1873. Available at: http://doi10.1016/S2095-3119(17)61662-9.
11. Reimund, P. Rötter, Fanou, L. Sehomi, Jukka, G. Höhn, Jarkko, K. Niemi, and Marrit, van den Berg. On the use of agricultural system models for exploring technological innovations across scales in Africa: A critical review. Bonn: July 2016, Available at: https://www.zef.de/uploads/tx_zefnews/zef_dp_223.pdf.

## Сучасні тенденції розвитку сільського господарства Камеруну та напрями забезпечення його сталості

## Чітчуї Тумені Арманд Анасіє

Встановлено, що сільське господарство є основою економіки Камеруну, де зайнято $80 \%$ робочої сили, що задіяна в аграрному секторі, працює у сільському господарстві та забезпечує $22,3 \%$ валового внутрішнього продукту і $30 \%$ його експортних доходів. Досліджувана галузь формує товарну пропозицію сільськогосподарської продукції як на внутрішній, так і зовнішній ринки, зокрема таких видів продукції: какао, кава, бавовна, банани, пальмова олія, тютюн, чай, ананаси, кукурудза, просо, сорго, ямс, картопля, боби і рис. Визначено, що галузь тваринництва розвинуто по всій країні та особливо важливу роль вона відіграє в північному регіоні.

Доведено, що головною метою розвитку сільського господарства країни є забезпечення продовольчої безпеки, на досягнення якої посилено впливають глобалізаційні зміни клімату. Для досліджуваної країни характерною є орієнтація до «продуктової концепції», у якій основною ціллю є забезпечення фізичної та економічної доступності агропродовольства. Висвітлено стратегічні пріоритети у розвитку сільського господарства країни, які передбачають мобілізацію місцевих ресурсів на інтенсивне виробництво із урахуванням екологічних вимог.

Обгрунтовано, що на сьогодні сформувалися спеціалізовані регіони щодо виробництва певних видів продукції, що дозволило забезпечити підвищення урожайності сільськогосподарських культур. Наголошується на тому, що існують розбіжності у показниках продуктивності сільськогосподарського виробництва у фермерських господарствах та науково-дослідних станціях, що свідчить про існування невикористаних резервів підвищення ефективності виробництва.

Систематизовано характерні особливості розвитку сільськогосподарського виробництва країни: низький рівень технічного забезпечення; прояв тенденції до збільшення земельних угідь ферм; переважання дрібних товаровиробників; низький рівень доходу фермерів; переважання неформальних економічних відносин; використання ручної праці; ускладнений доступ до позикових джерел фінансування; низький рівень залучення товаровиробників у ланцюги доданої вартості. Доведено, що за умови активізації інвестиційної діяльності у сільському господарстві країни та реалізації передбачених заходів стратегічного національного плану буде сформовано умови та передумови до ефективного розвитку, модернізації виробничої інфраструктури, доступу фермерів до джерел фінансування та інших складових елементів сталого розвитку.

Виділено, що однією із умов забезпечення сталого розвитку сільського господарства країни є інтенсифікація сільськогосподарського виробництва, що сприятиме екологічній та соціальній сталості. Як важливі інструменти їі досягнення виділено технологічні нововведення у напрямі запровадження нових або вдосконалених агротехнології

вирощування та сучасних практик управління, нових порід сільськогосподарських тварин та птиці, інтегровані практики підвищення родючості грунтів та повсюдної заміни ручної праці. Інноваційні рішення необхідно узгоджувати із специфікою виробничого процесу, а також в аспектах екологічності, водо- та енергомісткості.

Ключові слова: сільське господарство, сталий розвиток, продовольча безпека, фермери, інвестиційна привабливість.

Современные тенденции развития сельского хозяйства Камеруна и направления обеспечения его устойчивости

## Читчуи Тумэни Арманд Анасие

Установлено, что сельское хозяйство является основой экономики Камеруна, где занято $80 \%$ рабочей силы, которая задействована в аграрном секторе, работает в сельском хозяйстве и обеспечивает $22,3 \%$ валового внутреннего продукта и $30 \%$ его экспортных доходов. Исследуемая область формирует товарное предложение сельскохозяйственной продукции как на внутренний, так и внешний рынки, следующих видов продукции: какао, кофе, хлопок, бананы, пальмовое масло, табак, чай, ананасы, кукуруза, просо, сорго, ямс, картофель, бобы и рис. Определено, что отрасль животноводства развита по всей стране и особенно важную роль она играет в северном регионе.

Доказано, что главной целью развития сельского хозяйства страны является обеспечение продовольственной безопасности, на достижение которой усиленно влияют глобализационные изменения климата. Для исследуемой страны характерна ориентация на «продуктовую концепцию», в которой основной целью является обеспечение физической и экономической доступности агропродовольства. Освещены стратегические приоритеты в развитии сельского хозяйства страны, предусматривают мобилизацию местных ресурсов на интенсивное производство с учетом экологических требований.

Обосновано, что на сегодня сформировались специализированные регионы по производству определенных видов продукции, что позволило обеспечить повышение урожайности сельскохозяйственных культур. Отмечается, что существуют различия в показателях производительности сельскохозяйственного производства в фермерских хозяйствах и научно-исследовательских станциях, что свидетельствует о существовании неиспользованных резервов повышения эффективности производства.

Систематизированы характерные особенности развития сельскохозяйственного производства страны: низкий уровень технического обеспечения; проявление тенденции к увеличению земельных угодий ферм; преобладание мелких товаропроизводителей; низкий уровень дохода фермеров; преобладание неформальных экономических отношений; использование ручного труда; затрудненный доступ к заемным источникам финансирования; низкий уровень привлечения товаропроизводителей в цепи добавленной стоимости. Доказано, что при активизации инвестиционной деятельности в сельском хозяйстве страны и реализации предусмотренных мероприятий стратегического национального плана будет сформированы условия и предпосылки для эффективного развития, модернизации производственной инфраструктуры, доступа фермеров к источникам финансирования и других составляющих элементов устойчивого развития.

Выделено, что одним из условий обеспечения устойчивого развития сельского хозяйства страны является интенсификация сельскохозяйственного производства, что будет способствовать экологической и социальной устойчивости. В качестве важных инструментов ее достижения выделено технологические новшества в направлении внедрения новых или усовершенствованных агротехнологий выращивания и современных практики управления, новых пород сельскохозяйственных животных и птицы, интегрированные практик повышения плодородия почв и повсеместной замены ручного труда. Инновационные решения необходимо согласовывать со спецификой производственного процесса, а также в аспектах экологичности, водо- и энергоемкости.

Ключевые слова: сельское хозяйство, продовольственная безопасность, фермер, инновации, инвестиционная привлекательность.


[^0]:    ${ }^{\oplus}$ Chitchui Toumeni Armand Anaciet, 2019.

