AN ANALYSIS OF THE IMPACT OF DROUGHT ON THE NATIONAL ECONOMY

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RESEARCH ARTICLE

Abstract
Today, agriculture enjoys special attention in all countries of the world, regardless of the level of economic development. In the contemporary world, the most developed countries from the point of view economically, they are also the largest producers and exporters of agricultural products. As the basic branch of our national economy, agriculture asserts itself as a field of particularly complex and complicated activity. The complexity of agriculture, as a branch of material production, of the national economy, is determined by the role of agriculture in economic development and its technical peculiarities, economic and social, which gives general economic laws a specific manifestation in agriculture. Unfortunately, in recent years, agriculture is facing a threat, namely drought. The importance of the present research is obvious considering the increasing trend of annual average temperatures from year to year due to global warming - especially - but also a other factors such as pollution. Drought, even a temporary one of medium size can have catastrophic effects in all branches of the economy, especially in agriculture, but also in other fields related to human life.

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INTRODUCTION

Droughts can be considered the most complex climatic phenomena, because several factors participate in their triggering, namely: atmospheric precipitation, soil water reserve accessible to the plant, air humidity and temperature, evapotranspiration, wind speed, etc., these being the main climatic parameters that define the state of dry or dry weather (Riedel, 2018). To these are added other factors that define the characteristics of the active surface (relief, soil features, water table depth, degree of vegetation cover, etc.), factors that define the physiological characteristics of the plant (such as the variety and vegetation phase, the degree of drought resistance), as well as factors that highlight the anthropic influence on the environment (the state of the land and the agricultural techniques used that can facilitate the depletion of soil water) (Fohrer, 2020). As a complex meteorological phenomenon, drought is characterized, in general, by the absence of precipitation, as well as by the increase in potential evapotranspiration (Prabhu, 2020). On the other hand, hot and dry winds (dry winds), with high speeds, also contribute to increasing evapotranspiration and reducing humidity, both from the soil and from the air. During the growing season, the various crops and plant associations have varying requirements for water, so that a period of drought does not simultaneously affect the entire cultivated or natural vegetal carpet (Rickmann, 2014). Drought leads to large losses of agricultural production. Its consequences were especially hard in the past, especially when there were two or three dry years in a row. The consequences of the drought are determined both by the degree of intensity and duration, as well as by the affected surface (Maurer, 2016). Droughts covering an area of up to 10% of the territory of Romania were evaluated as local; 11-20% are considered – vast; 21-30% – very large; 31-50% – extreme, and above 50% are considered catastrophic droughts, because they cause great losses to the

national economy. Agriculture is an important branch of any national economy with functions among the most various: biological, main source of economic activity and use of labor force, factor ecological protection of the environment and the fight against desertification in many areas of the Earth, a way of life, a technical and cultural tradition and, last but not least, agriculture is a civilization (Riedel, 2018).

MATERIAL AND METHOD

The key research methods employed were analysis and synthesis, analogy, and graphics to resemble the results.

RESULTS AND DISCUSSIONS

In Romania, agriculture is an economic branch of first importance, with an old tradition, which constitutes the basic occupation for a large part of the population, respectively 27.7%, in 2022. In fact, in our rural environment lives almost half (over 47%, in 2002) of the total population of the country. The importance of agriculture as a branch of activity is given by the agricultural potential of our country, represented, first of all, by the 14.8 million hectares of agricultural land, of which 8.7 million hectares (62%) are arable. In para secondly, of the good-medium quality of the soil, which, together with a climate mediocre, ensures agricultural productions able to cope with the food consumption of populations. Agricultural production, unlike industrial production, has a very high degree of insecurity, depending, to the greatest extent, on the climatic conditions. Under the in this aspect, Romania presents, as shown above, a great climate risk, especially with regard to the precipitation regime, a fact for which both droughts, as well as floods are frequent phenomena that greatly affect production agricultural. Specialists estimate that, at the level of the entire country, about 2% of the total of the agricultural area is affected by extremely severe drought (practically, in all years), 28% of very severe drought (in more than 40 out of 100 years) and 60% of reduced drought (in less than 10 out of 100 years). As is known, drought primarily affects plant production, and depending on the duration and intensity of this phenomenon, its negative effects are it also transfers to animal husbandry. The most important losses are related to calamity grain crops, on which security depends to the greatest extent food of the population. This happens, in case of drought, also in Romania, known by the large share of vegetable agricultural production (62.8%), in the total production obtained in the agricultural sector. Regarding the profile of plant production, this it is given by the grain culture, dominated by wheat and corn, which have an old tradition in our country. At the moment, because cereal crops, practiced mainly by private agricultural sector, are carried out on small areas, with minimum expenses of establishment and maintenance, the harvests obtained are low and influenced by the conditions climate, especially drought. Consequently, the incomes of agricultural producers are in accordance with the low productivity, and the drought that is extending from one year in another, it puts many farmers in the impossibility of resuming the agricultural cycle. In the graphic below is presented how the drought affected wheat harvests and corn, in 2022, when this phenomenon manifested itself in the mod excessively, for long periods of time, and sometimes included the whole territory of the country. This caused the areas cultivated with cereals to be calamity on large areas, and the value losses to be significant.

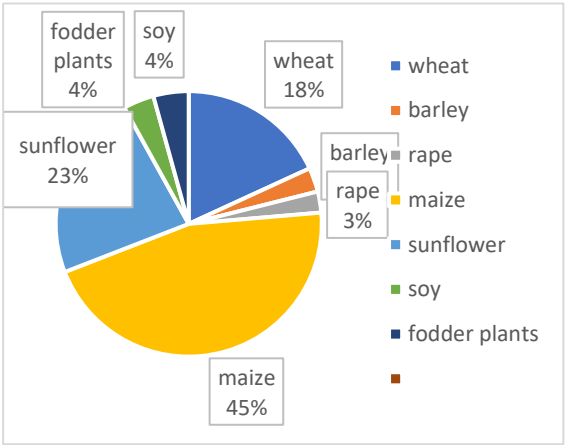

Figure 1 **Crops affected by drought in 2022**

Within cereal crops, the strongest impact of annual droughts, from the analyzed period, it was manifested at the level of wheat and corn crops, which represent the main cereal plants on which food security depends the population of our country. Since drought can occur at different times of the year, and because the two cereals have different vegetation cycles and water requirements, this extreme weather phenomenon can affect, during an agricultural year, or only the culture wheat, or only that of corn. Exceptionally, as was the year 2022, when

excessive drought manifested itself over a long period of time, they were calamities both cultures.

The drought from 2022 brings a loss of over one billion euros in Romanian agriculture due to the lack of production on the 800,000 hectares affected by the drought. Thus, after a year with record production of 34 million tons of grain, like 2021, and maximum prices, agriculture is hit again. In this way, the losses that accumulate from one year to another, due to excessive and prolonged droughts, accentuates the decline in agriculture and contributes to the accentuation of poverty, especially at the level of over 4 million small holdings, of the peasant household type. It comes to the situation that, regardless of the price of sale of grain, a large part of the peasants will not be able to cover their expenses of production and therefore to be unable to resume the agricultural cycle. The impact of droughts in agriculture is also felt by the urban population, through the prices of agricultural products, which register increases immediate and constitutes a barometer of the intensity of these meteorological phenomena destructive. Among the negative effects of drought, poverty is the most serious dysfunction, in socioeconomic terms, from the areas affected by this climatic phenomenon extremely. Poverty is defined as a state of long-term lack of necessary resources to ensure a way of life considered decent, acceptable at the level of one community. This definition suggests the idea of relating the phenomenon to the societal context more widely, in this case, to the state of poverty in our country.

The research undertaken in order to establish the level of community poverty in our country highlights the fact that it cantons, especially, in the rural environment, where the population lives, for the most part, from the incomes obtained from agricultural production (vegetable and animal), which can fluctuate significantly depending on the situation of climatic parameters. Although the factors of poverty are identified mainly in economic, political, social and cultural, it can also be based on a faulty drought management.

The phenomenon is sometimes also due to the low degree of awareness of the working condition by the population and its non-involvement in prevention and mitigation actions desertification and soil degradation. This explains the fact that the areas with bags of persistent poverty are also those that register a sharp degradation of irrigation systems or deforestation of protective forest curtains an agricultural land. Therefore, the socioeconomic impact of rural poverty translates by the low standard of living of the population, by the deficit of human capital, by high demographic dependence, through a poorly developed infrastructure, through poor living conditions and inadequate public services.

CONCLUSIONS

Drought, even a temporary one of medium size can have catastrophic effects in all branches of the economy, especially in agriculture, but also in other fields which are related to human life. Following the research, several solutions to combat the drought can be proposed: Investments in irrigation systems; reducing dependence on the international economic supply chain by developing the local supply chain; use of wastewater in agriculture. In this way, the consumption of drinking water from the groundwater table would be reduced; food storage system to combat food waste; diversification of food resources. In conclusion, it can be stated that in order to reduce the degree of vulnerability a of an economy to the socio-economic effects of drought phenomena can be implemented strategies for controlled reduction of specific water requirements or identification of possibilities of increasing the water availability of the respective company, by increasing the capacities of storage (accumulations, artificial enrichment of aquifers) and identification of new water sources that can be transported to that area. Considering economic development exacerbated by human society over the past two centuries, with exponentially increasing demands of water, the only solution in maintaining an optimal and acceptable degree of vulnerability to drought is the social and economic development in balance with the environmental potential of the respective region, in other words, sustainable socio-economic development.

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