

Climate change a problem of the century, including food security

Rodica MELNIC, Silvia SECRIERU

Technical University of Moldova, Chisinau, Republic of Moldova

Abstract

Climate changes are the biggest problem facing humanity. Human activities, especially the burning of fossil fuels, increasing the amount of greenhouse gas emissions in the atmosphere, accelerate the rate of climate change. The effects of climate change are already being felt, and the damage is likely to be enormous worldwide. During the research, several materials were studied, maps regarding the current situation of the study object, satellite images, such as agroclimatic maps, biological diversity, soil cover and others currently used. The relevance of the research lies in increasing the awareness of the imminence of the integration of climate change into concrete actions aimed at food security at all levels.

In the Republic of Moldova, the sum of temperatures above +10°C is used as an indicator of the availability of thermal resources, based on which the territory is divided into agroclimatic zones, where the thermal risk index varies from 2750°C in the Northern zone to 3350°C in the Southern zone. According to some sources and models, including the three SRES scenarios regarding the increase in temperatures on the territory of Moldova, an increase of +1.2-1.4°C is expected in the near future, until 2050. The temperature will increase by +5.1 -5.2°C in the Southern and Central Zone, and for the Northern Zone an increase of +4.5°C is expected in the Northern ZAE until the year 2100. Currently, it is mentioned that the thermal state of the air and soil is one of the main factors which affect the development of plants, including strategic ones.

According to Dr. Jean-François Soussana who mentioned, that the food system causes between 1/5 and 1/3 of the total greenhouse gas emissions from humans, but at the same time, climate change affects food security. This is highlighted by the reduction in the production of corn and wheat, being more sensitive to heat and vulnerable for this reason, because at the increase of 2°C, wheat harvests will decrease by 2% per decade, "severe, extensive and irreversible" consequences and within the forecasts with on the demand for food which will increase by up to 70% in the coming decades. If the temperatures will increase by more ~ 3.4°C, not only the crops in the drier and more arid areas will be affected, but also the other areas, that is why a durable and sustainable agriculture adapted to the current conditions is required.

Keywords: Climate changes, Vulnerability, Food security.