CLIMATE CHANGE AND ITS EFFECTS ON CULTURE IN MICROREGION CARACAL - OLT

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keywords: sustainable development, agriculture, climate change, risk

ABSTARCT

Sustainable development - meeting the needs of the present without compromising those of the future generations - is the process which has been given special attention in both the research and in the sphere of economic policy decision.

Caracal Plain, which is the interest of this paper is an agricultural area with a generally dry climate, particularly winter and summer seasons, the frequency and intensity of droughts in these seasons is rising . To assess the influence of climate variability on the vegetation, yields of major cereals field in this region, namely wheat and maize, with a significant share in the structure of field crops in the south, they used data from meteorological and agrometeorological during 1991-2000 the weather station data Caracal and specialized / technical, or average yields / ha, from Agricultural Research Station Caracal Olt County Agricultural Department.

In the year 2012 compared to the Olt county, whose total area was 549 828 ha, the area was approximately 47,696 micro-region that is about 9%.

A similar percentage still holds in terms of agricultural area, the micro Caracal, about 41 416 ha, accounting for 9.5% of the agricultural area of Olt county.

INTRODUCTION

As we know, in Romania the agriculture is an important economic sector, primarily importance in the country's agricultural potential, represented by the 14.7 million hectares of agricultural land, of which 9.4 million hectares (64%) are arable land. But the agriculture in all its segments is directly affected by extreme weather events and their negative effects cannot be minimized or ignored. It is noted that climate change in our country clearly reflects the changes of temperature and precipitation regime, especially from 1961 to the present; the effects on growth and development of agricultural plants are significant. In Romania, the changes in the fall in the global climate, but with specific geographical region where is located our country. The agricultural areas in our country are most affected by frequent drought (around 7 million hectares), the most vulnerable areas to water scarcity and aridity are a trend in southern Oltenia, south-eastern and eastern Moldova, Dobrogea areas and the western of the Tisa plains.

MATERIAL AND METHOD

In the year 2012 compared to the Olt county, whose total area was 549 828 ha, the area was approximately 47,696 micro-region that is about 9%.

A similar percentage still holds in terms of agricultural area, the micro Caracal, about 41 416 ha, accounting for 9.5% of the agricultural area of Olt county. As arable land, the micro Caracal with 40,532 ha had, in the year 2012 in the county accounted for over 10% of the total arable area.

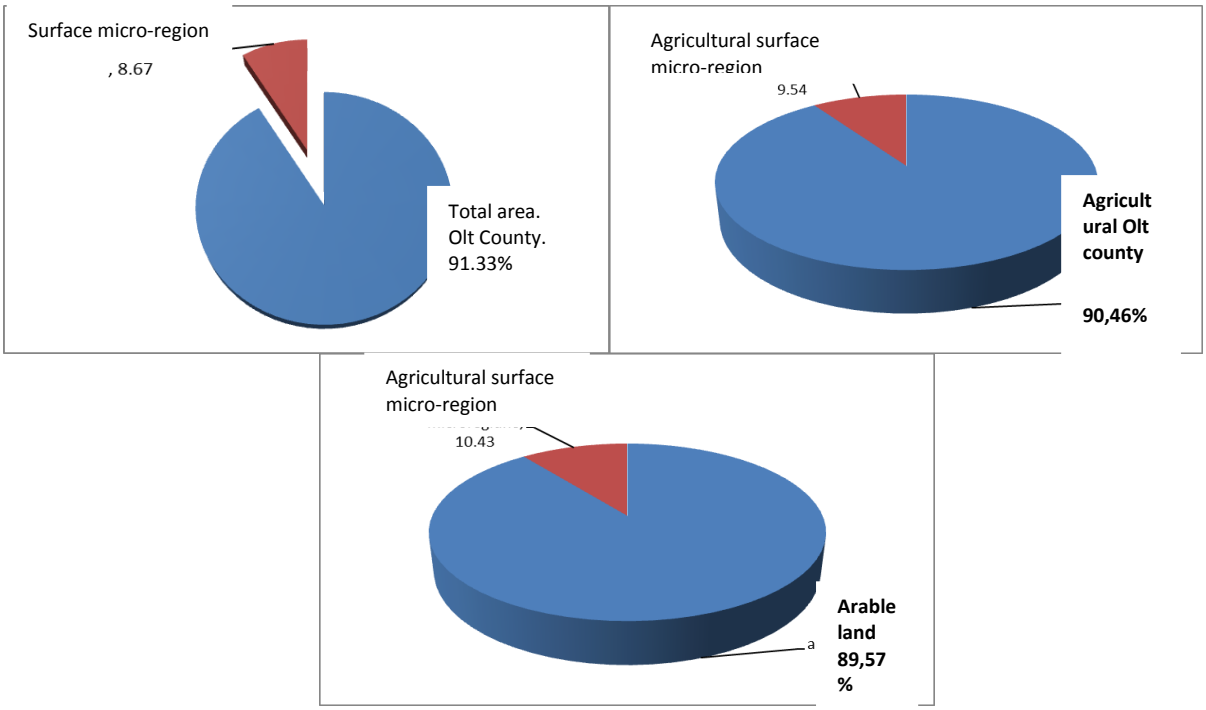

Figure.1. The agricultural area of Olt county and micro-region

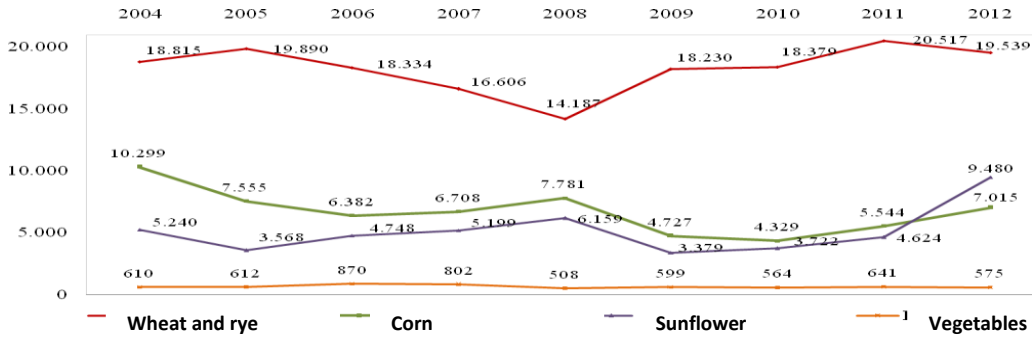

Figure.2.The area planted with wheat, corn and sunflower in areas of micro-zone Caracal, during 2004 - 2012 (hectares)

RESULTS AND DEBATES

The winter wheat, average annual rainfall is likely to decrease 2.2-6.3% in the decade from 2021 to 2050, respectively, 5.9 -9.3% in 2071-2100 to 1961-1990. It should be noted that annual rainfall is deficient in relation to the optimum requirement of precipitation (451-600 mm / year) of winter wheat plants during the growing season to maintain the character of the specific dry moderate rainfall and climatic conditions next θ the corn crop, annual rainfall decrease is more pronounced in the decade 2071-2100 namely 10.9% -15.7% compared to 1961-1990

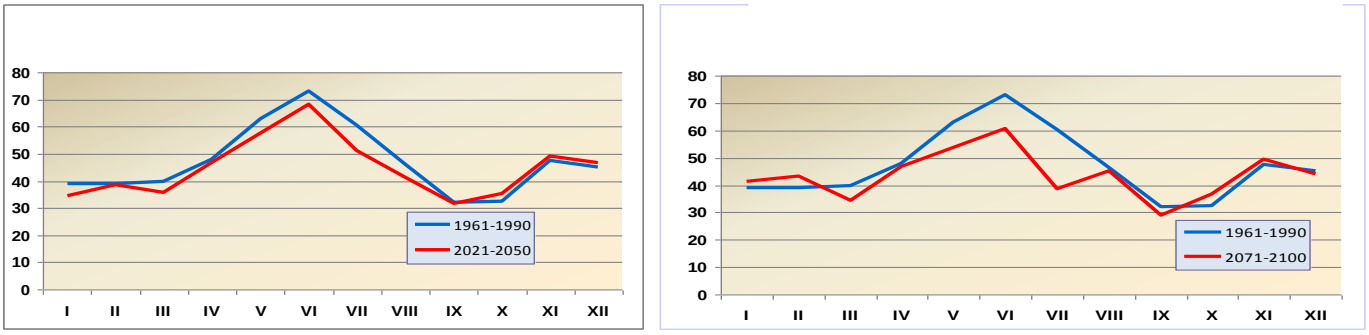

Figure.3. The quantities monthly precipitation (mm) under climate change (2021-2050) – CARACAL

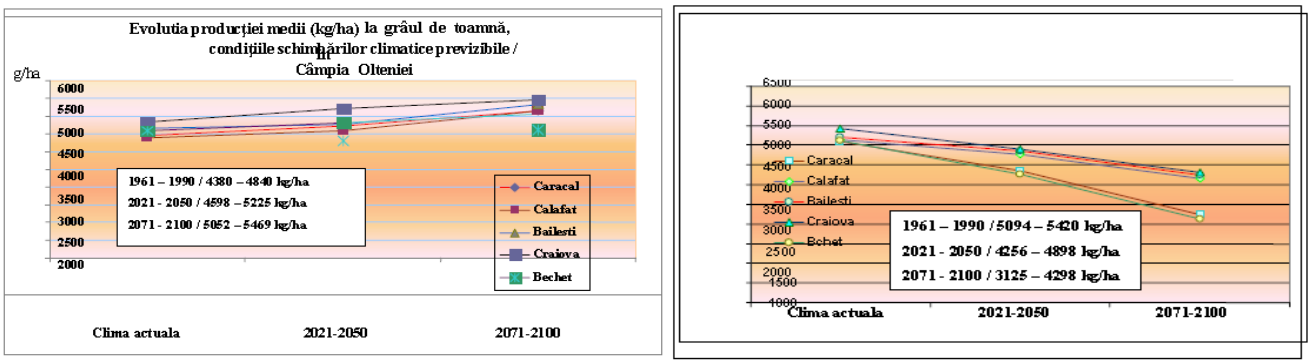

Figure.4. Evolution of average wheat and maize in terms of climate change Oltenia Plain

Seleanynov index

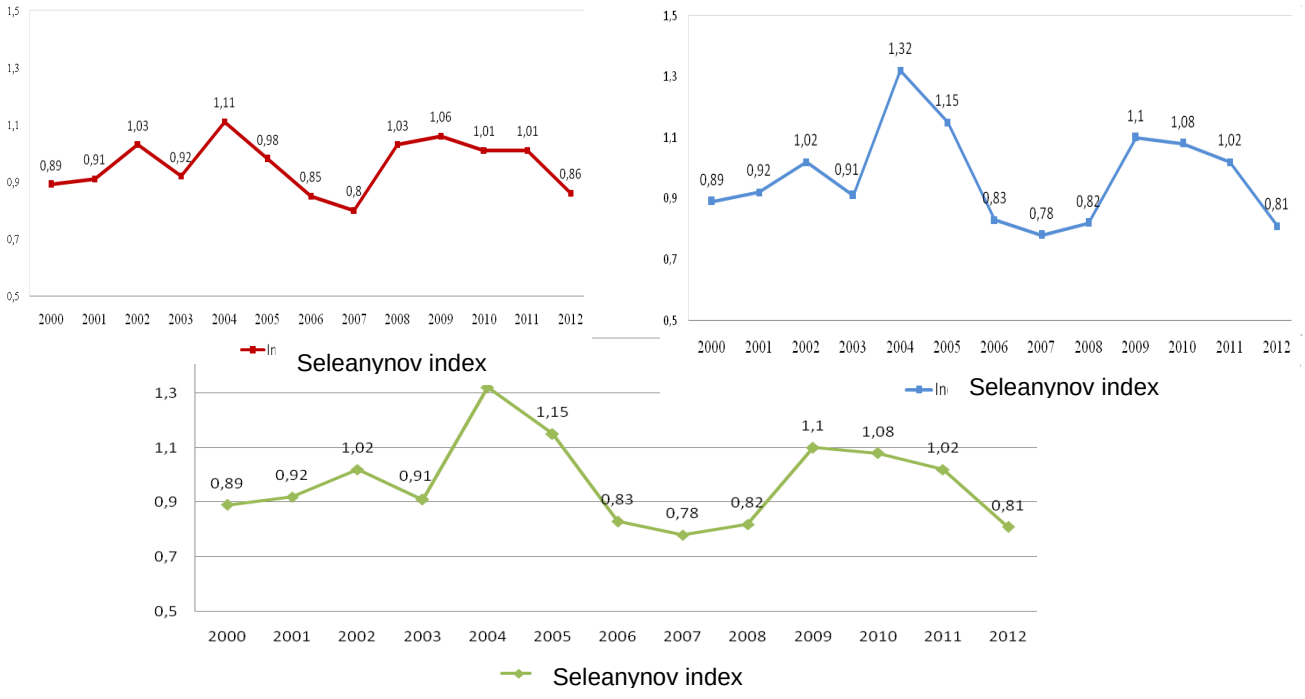

Figure.5. Seleanynov index deviation from normal values for wheat crop, maize and sunflower)

Taking into account the three cultures, we applied the formula for growing winter wheat, maize and sunflower, taking into account the growing in features and risks of these three crops in various stages of development (for wheat - April-June, maize and sunflower - April to August).

CONCLUSIONS

- For Romania, Oltenia and micro-zone respectively Caracal, climate change has had and will have a significant impact on the development of natural conditions, agriculture and biodiversity are the most vulnerable areas to climate change, given the dependence on climatic conditions and negative ecological, economic and social .
- In our country, territory with increased risk from droughts, with a tendency to aridity and desertification even includes large areas of southern Oltenia and Moldova, Dobrogea, southern and eastern Wallachia. Therefore, the region is perhaps the most exposed region of Romania desertification .
- Analysis of the results in terms of possible climate simulated estimated based on regional climate change scenarios for the period 2021-2050 and 2071-2100 points out that changes in future climate evolution are obvious and will have significant effects on main crops in micro-area analysis.
- Calculation Seleanynov indices and their correlation with the economic and financial results MICROREGION Caracal come to confirm and strengthen the predictions of the scenarios presented.
- Agriculture MICROREGION is increasingly volatile climate change variations from one vintage to another, and therefore the financial results of farmers actually show vulnerability are exposed to them and the implications arising on income levels and living standards their and their families, and poverty in general, all these things are considered as elements of sustainable development.

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This research work was supported and financed by the POSDRU/107/1.5/S/76888 program.