Agricultural Drought Risk Assessment for Different Climate Regions of Iran

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Abstract

Agricultural drought risk assessment is the purpose this study. To reach this object ,we used the quantified concept of risk that is the product of the hazard severity in vulnerability, so in this study we monitored the risk concerning all of its component & hazard and vulnerability.

In this Regards, the agricultural drought influences rain fed (dry land agriculture) directly, 14 rain fed (dry land) regions inside the country have been selected as case studies and their 30 years meteorological data have been collected and wheat and barley have been chosen to be studied as they are strategic products and their yield and growth duration data have been collected in the studied regions.

Vulnerability is the bio-physical damage degree at the danger zone. Therefore, in this study, yield losses have been selected as the vulnerability index. Yield losses have calculated depending on the relation between evapotranspiration and crop yield. Monitoring the drought indices and crop relative yield relations, shows that the more drought severity is the more crop yield loss, that is the crop vulnerability.

The calculated risk is deviation of the current yield from potential yield cased by the agricultural drought in the region.

The Results showed that in all the regions, except Gorgan, the volume of wheat drought risk is greater than that of barley drought risk .In the other word, the drought risk will influence the barley less then of the wheat. In the Gorgan case results are different due to the very high humidity in this region.

The Results also showed that, In comparison of drought risk with degree of drought that agricultural drought risk in dry land area is more greater than agricultural drought risk in wet regions.

Key words:
Agricultural drought, Risk, Hazard, Vulnerability, Evapotranspiration, Relative yield, Aridity.

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