World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Evaluating the Effects of Rainfall and Agricultural Practices on Soil Erosion (Palapye Case Study)

Authors : Mpaphi Major

Abstract : Soil erosion is becoming an important aspect of land degradation. Therefore it is of great consideration to note any factor that may escalate the rate of soil erosion in our arable land. There exist 3 main driving forces in soil erosion which are rainfall, wind and land use of which in this project only rainfall and land use will be looked at. With the increase in world population at an alarming rate, the demand for food production is expected to increase which will in turn lead to more land being converted from forests to agricultural use of which very few of it are now fertile. In our country Botswana, the rate of crop production is decreasing due to the wearing away of the fertile top soil and poor arable land management. As a result, some studies on the rate of soil loss and farm management practices should be conducted so that best soil and water conservation practices should be employed and hence reduce the risk of soil loss and increase the rate of crop production and yield. The Soil loss estimation model for Southern Africa (SLEMSA) will be used to estimate the rate of soil loss in some selected arable farms within the Palapye watershed and some field observations will be made to determine the management practices used and their impact on the arable land. Upon observations it have been found that many arable fields have been exposed to soil erosion, of which the affected parts are no longer suitable for any crop production unless the land areas are modified. Improper land practices such as ploughing along the slope and land cultivation practices were observed. As a result farmers need to be educated on best conservation practices that can be used to manage their arable land hence reduced risk of soil erosion and improved crop production.

Keywords : soil and water conservation, soil erosion, SLEMSA, land degradation
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020