Research Note

K VALUES OF THE SOILS OF THE ACUL WATERSHED IN HAITI[1]

The K factor in the universal soil loss equation[2] is related to Soil Taxonomy at the series level. It is the result of soil properties that affect the infiltration rate and hydraulic conductivity, and the transporting force of runoff. Particle size distribution, organic matter content and
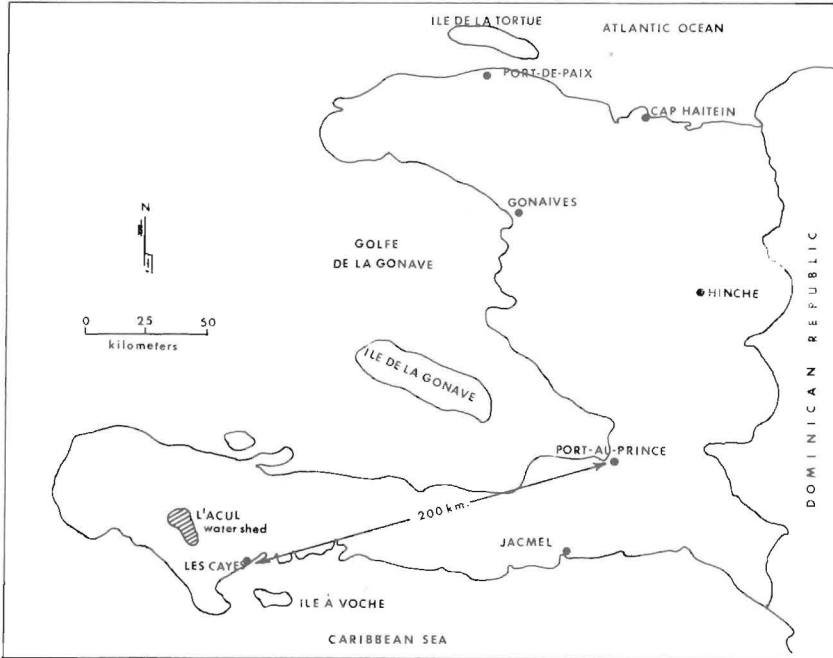

FIG. 1.—Location of the Acul Watershed in Haiti.

aggregate stability are important factors. Data on the K values of the soils of Puerto Rico were grouped according to the orders of the U.S. Soil Taxonomy and published recently by Lugo-López and Acevedo.[3]

A soil survey was recently conducted of the soils of the Acul watershed in the southwestern part of Haiti (fig. 1). The survey, the first of its kind

in Haiti, covered about 7,600 ha of mountainous terrain (fig. 2). The 12 soil series identified were tentatively classified into 10 soil families belonging to four soil orders: Inceptisols, Mollisols, Ultisols and Oxisols.

K values for the soils of the Acul watershed were estimated on basis of data on particle size distribution and aggregate stability. They range from 0.02 to 0.24. The higher the value the more susceptible is the soil
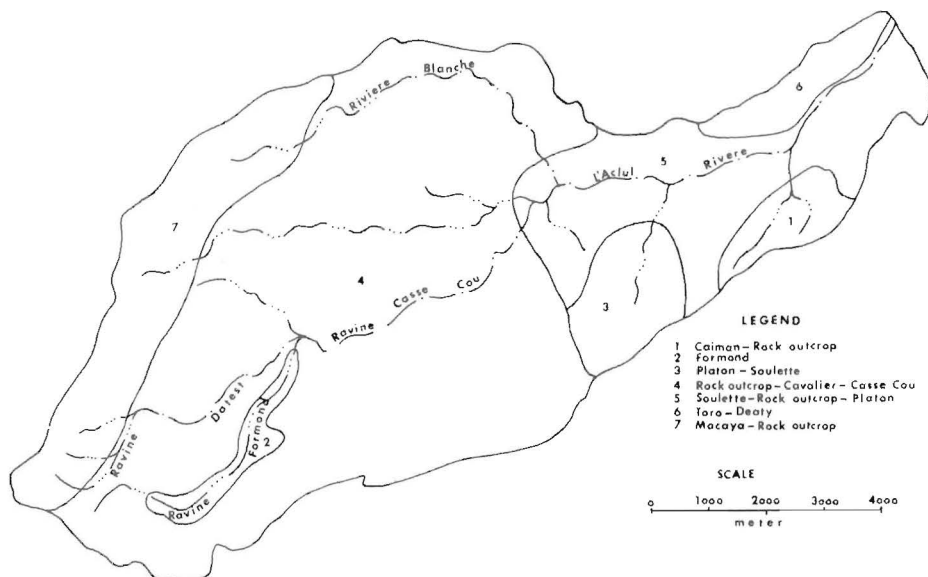

FIG. 2.—General soil map of the Acul Watershed in Haiti.

to sheet and rill erosion by water. The data are summarized in the following tabulation:

Soil Order	Mean K values
Oxisols	0.04
Mollisols	.10
Ultisols	.17
Inceptisols	.17

The Oxisols of the Acul watershed in Haiti are the least susceptible to erosion. Three K values out of four are 0.02; however, the value for the Macaya series is 0.10. These data agree with those from Oxisols in Puerto Rico where identical K values were obtained.[3] Mollisols of Haiti are slightly erodible. The three Mollisols included have a K value of 0.10. These values are lower than those reported from Puerto Rico[3] and

Oklahoma[4]. The three Ultisols have K values of 0.17. They are more susceptible to erosion than soils identified as Ultisols in Puerto Rico.[3] The Inceptisols range in K values from 0.10 to 0.24 with a mean value of 0.17. These values agree completely with values reported for Inceptisols in Hawaii[5] and Puerto Rico.[3]

Charles A. Reynolds
USDA Soil Conservation Service
Abdul Wahab
U.S.AID
M.A. Lugo-López
UPR Agricultural Experiment Station

[4] Moresco, R. R. and F. Gray, 1977. Determining the soil erodibility factor for selected Oklahoma Mollisols, Proc. Intl. Conf. on Soil Erosion, May 24–26, 1976, pp. 127–34, West Lafayette, Indiana.

[5] El-Swaify, S. A. and E. W. Dangler, 1977. Erodibilities of selected tropical soils in relation to structural and hydrologic parameters, Proc. Int. Conf. on Soil Erosion, May 24–26, 1976, pp. 105–13, West Lafayette, Indiana.