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Changes in Human Vulnerability and Resilience with Respect to Various Streamflow Allocations in the Nile River Basin

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The views expressed herein are those of the author and do not reflect the position of the United States Military Academy, the Department of the Army, or the Department of Defense.

Abstract: The purpose of our study is to develop a model to understand how changes in water availability can affect changes in human dynamics relating to vulnerability and resilience within Egypt over a specific time horizon. Our team collected data from various resources specializing in indices used to measure and monitor human dynamics. This data served as inputs to our systems dynamics model, which provides projections from simulations for different scenarios introduced into the results. Our model output shows that changes in these key variables have different effects on the scenarios presented. Our team concluded that changes in water availability within Egypt will produce negative effects on population, nutrition, and agriculture within the next 20-30 years.

Key Words: Agriculture, Arable Land, Nutrition, Population