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MAPPING MALI'S CLIMATE CHANGE VULNERABILITY

GATHERING AND PROVIDING INFORMATION FOR AN UNCERTAIN FUTURE

CONTEXT

Vulnerability mapping is a useful technique for identifying broad regions of a country that are likely to be more — or possibly less — vulnerable to the effects of climate change. Hence, such mapping can be useful in making policy decisions. The technique is limited, however, by the quality of the underlying data and our understanding of how the mapped variables combine to impact vulnerability. Given the lack of highly spatially resolved data, which prevented mapping at the local level, the purpose of this mapping exercise was to highlight geographic areas of particularly high *relative* vulnerability *within* Mali due to constellations of high climatic stress, high sensitivity (or susceptibility), and low adaptive capacity.

METHOD

This vulnerability mapping study used 18 indicators to evaluate, individually, the three components of vulnerability: exposure, sensitivity, and adaptive capacity. These three components were then combined to produce a map of relative vulnerability within Mali. Although the overall index may capture the greatest attention, much of the richness of this report lies in exploring the spatial patterns of vulnerability in the original 18 indicators and components

RESULTS

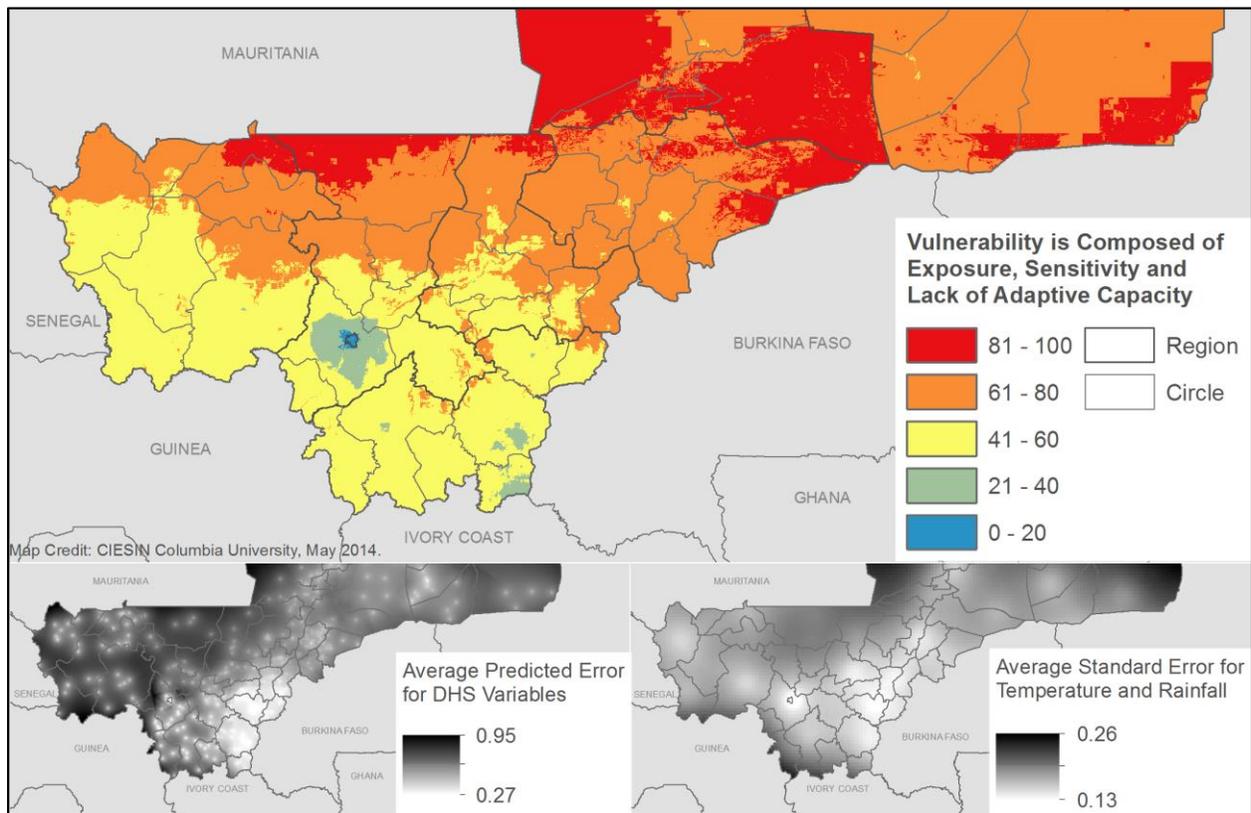
Due to high levels of poverty, all of Mali's territory and population could be said to be highly vulnerable to future climate change. In spite of the fact that Mali, like its Sahelian neighbors, has a long history of coping with climate variability — and its livelihood systems are diversified in such a way as to reduce risk — the country has higher levels of overall vulnerability as compared to countries with higher levels of income and more stable/humid climates.

The overall results show that vulnerability generally follows a strong north-south pattern, with relatively higher vulnerability toward the north (see Figure 1, next page). However, the high adaptive capacity and low sensitivity of the larger urban areas, especially Bamako and Sikasso, make them areas of relatively lower vulnerability. Southwestern Mali, the most densely settled agricultural region of the country, has medium to medium-high vulnerability.

Combining current vulnerability indicators with indicators of future climate change scenarios suggest that vulnerability will only change modestly by 2030. Results for 2050 suggest a more substantial change, with large areas of northern Mali shifting from medium-high to high vulnerability.

The results from this study are appropriate for indicating general areas of relative vulnerability within Mali. Actual vulnerability, however, likely varies on spatial scales not captured by this assessment. For example, some areas of Bamako are likely highly vulnerable to climate change, while some households in northern Mali are likely much less vulnerable than others.

OVERALL VULNERABILITY INDEX



Note: In the normalization process we excluded from consideration all areas north of 17.2°N latitude, a region that is very sparsely populated. We did this for two reasons: (1) vulnerability results are less meaningful for a region that is so thinly populated and where climate variability and change may have less of an impact due to already harsh conditions, and (2) inclusion of indicator data values for this region might skew results (due to extreme values) for the remainder of Mali, which is the primary region of interest.

ADDITIONAL INFORMATION

This brief highlights key conclusions from de Sherbinin, A., Chai-Onn, T., Giannini, A., Jaiteh, M., Levy, M., Mara, V., Pistolesi, L., and Trzaska, S. (2014). *Climate Change in Mali: Country Vulnerability Map*. USAID. Interested readers are invited to review the full paper at <http://community.eldis.org/ARCC/>.