

Matching Needs and Response Capacity

Projected Famine Risk in South Sudanese IDP Settlements and How the Humanitarian Community Can Access Those in Need

Introduction

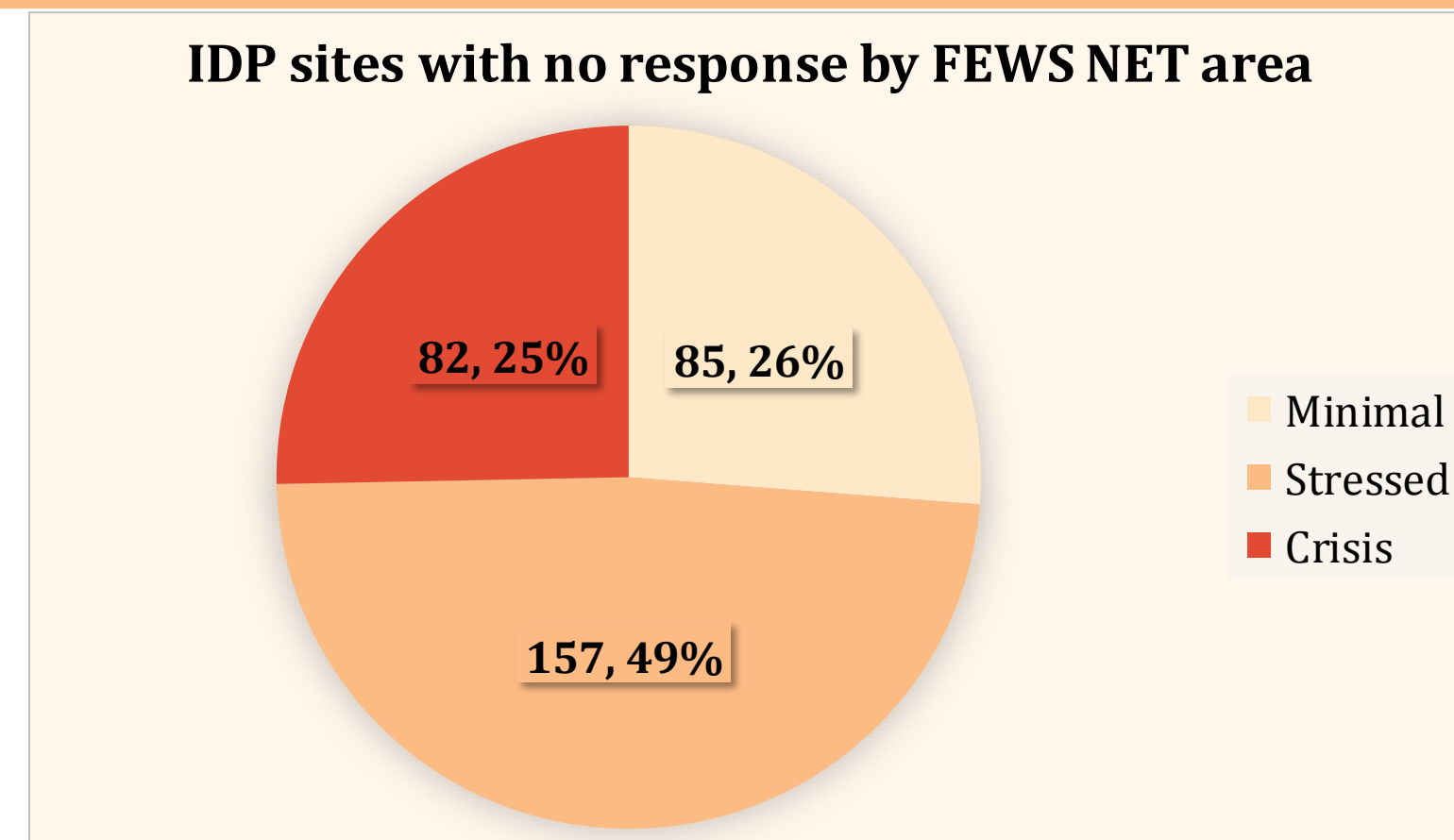


The civil war in South Sudan escalated in early 2015, resulting in ongoing large scale displacement. Jonglei, Upper Nile, and Unity States are most affected by the current conflict, exacerbating insecurity in general and food insecurity in particular. People are displaced from their homes, unable to farm, and/or deprived access to markets. Additionally, depreciating currency has increased the cost of food imports and Internal Displaced Persons (IDPs) rely on kinship networks to gain access to resources, straining the meager capacity of host communities. The Integrated Food Security Phase Classification estimated that 2.5 million people would face Crisis and Emergency level food insecurity between January and March 2015 and that 40% of the population in Greater Upper Nile would face significant nutrition deficits.

How can food aid get to the people most in need? The purpose of this project is to show 1) the IDP settlements in South Sudan that are most likely to be in need of food assistance January-March 2015, and 2) of those, which are also most accessible to humanitarian actors. Identifying potential delivery routes (UNDP airfields and road networks) will enable humanitarians to address the impending increase in demand for their services.

Research Questions

1. How many IDP settlements in need of response are in each of the FEWS NET risk areas?



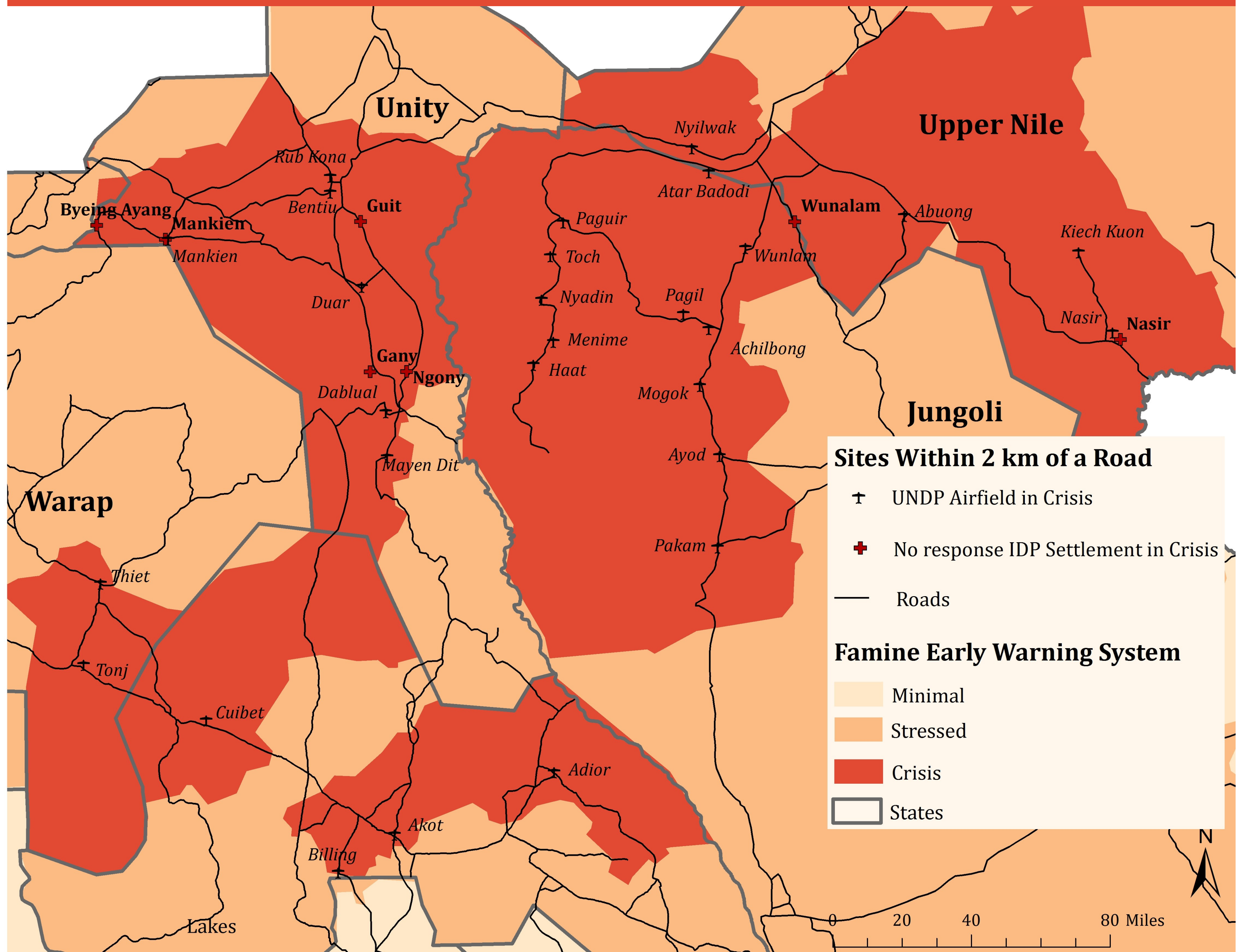
2. How far are IDP settlements from UNDP Airfields?

IDP Settlement	Total	Average Distance from a UNDP Airfield	Minimum Distance	Maximum Distance
Ongoing, crisis area	29	12	0	35
No response, crisis area	19	13	1	32

3. Which IDP settlements are most in need and most accessible?

Settlement	State	Type of site	IDP Count	Accessible?
Nasir	Upper Nile	IDPs in UNMISS PoC area	9	YES
Mayom	Unity	No caseload at the moment	44472	NO
Byeing Ayang	Unity	IDPs Integrated with host community	3480	YES
Kurie	Unity	IDPs Integrated with host community	4757	NO
Nyath	Unity	IDPs Integrated with host community	2089	NO
Rubkuey	Unity	No caseload at the moment	0	NO
Boaw	Unity	IDPs Integrated with host community	4280	NO
Jaak	Unity	No caseload at the moment	0	NO
Gany	Unity	IDPs Integrated with host community	4300	YES
Norbor	Unity	IDPs Integrated with host community	3390	NO
Ngony	Unity	IDPs Integrated with host community	5330	YES
Bil	Unity	No caseload at the moment	0	NO
Koch	Unity	IDPs Integrated with host community	7438	NO
Rier	Unity	IDPs Integrated with host community	3078	NO
Mankien	Unity	IDPs Integrated with host community	30000	YES
Wunalam	Jonglei	IDPs Integrated with host community	24149	YES
Wantho	Jonglei	IDPs Integrated with host community	10089	NO
Wanalab	Jonglei	IDPs Integrated with host community	18000	NO
Guit	Unity	IDPs Integrated with host community	10000	YES

Most Accessible IDP Settlements and UNDP Airfields



Discussion

The pie chart shows that there are 82 IDP settlements in crisis zones that are not being responded to by the humanitarian community. While significantly more of the settlements with no response are in the stressed areas (157, they are less likely to have acute need in the near future and thus should be monitored but not prioritized for response.

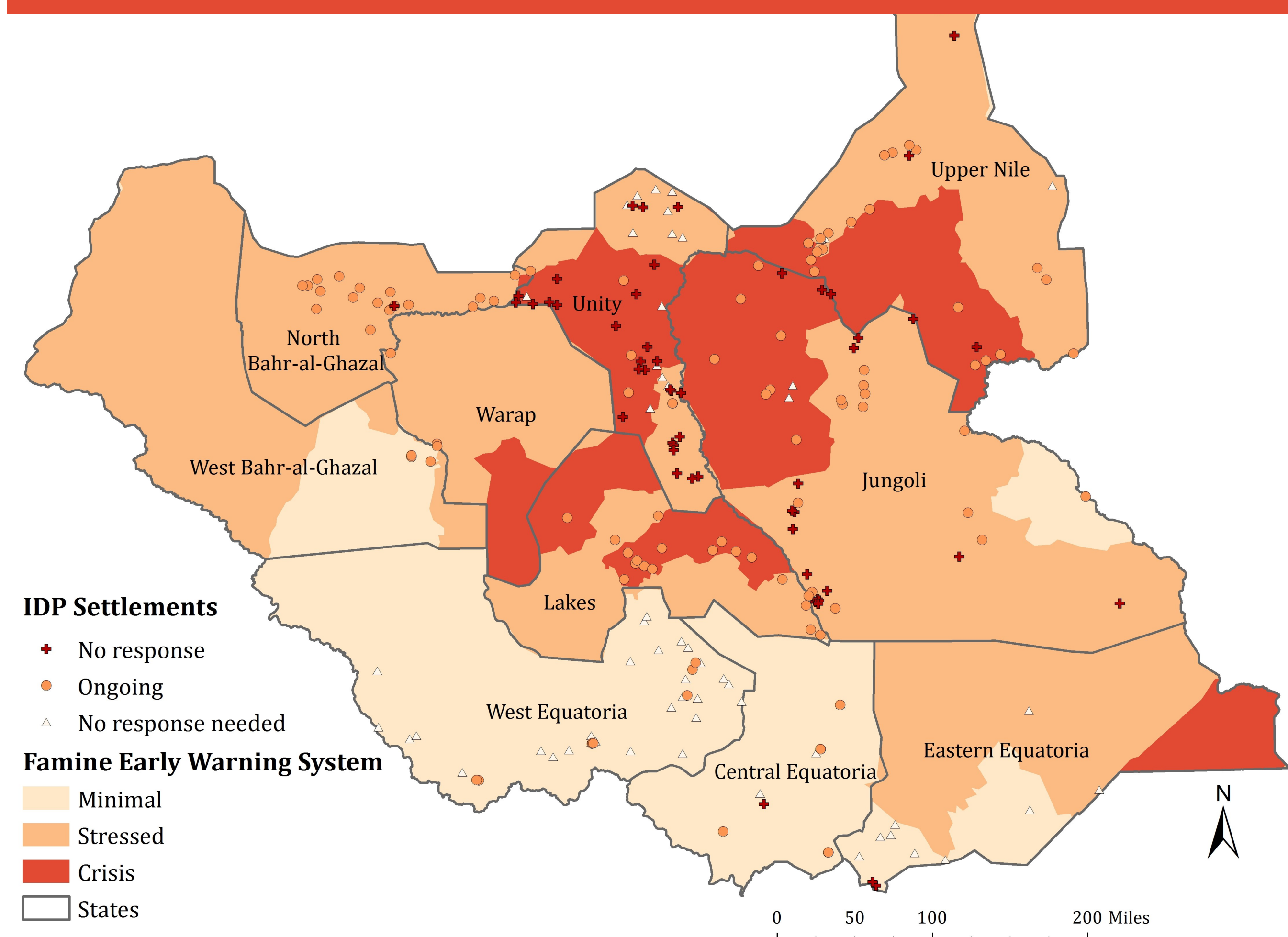
This analysis (in response to question 2) determined that an IDP settlement's proximity to a UNDP airfield does not affect its likelihood of receiving humanitarian assistance.

The chart in response to question 3, as well as the top right map, show that there are 7 IDP settlements that are most likely to be in need as well as most accessible (as determined by their position in a crisis zone and distance from a road). The map also shows all UNDP airfields that are within 2 kilometers of a road (28 total), providing a guide for where humanitarians might fly in supplies to then deliver to settlements over land. Settlements that are not within 2 kilometers of a road, however, should not be ignored. The UNDP sometimes uses airdrops to deliver aid to inaccessible areas, and considering the prevalence of airfields and flight radii of UNDP aircraft, every IDP settlement in South Sudan is accessible in some way.

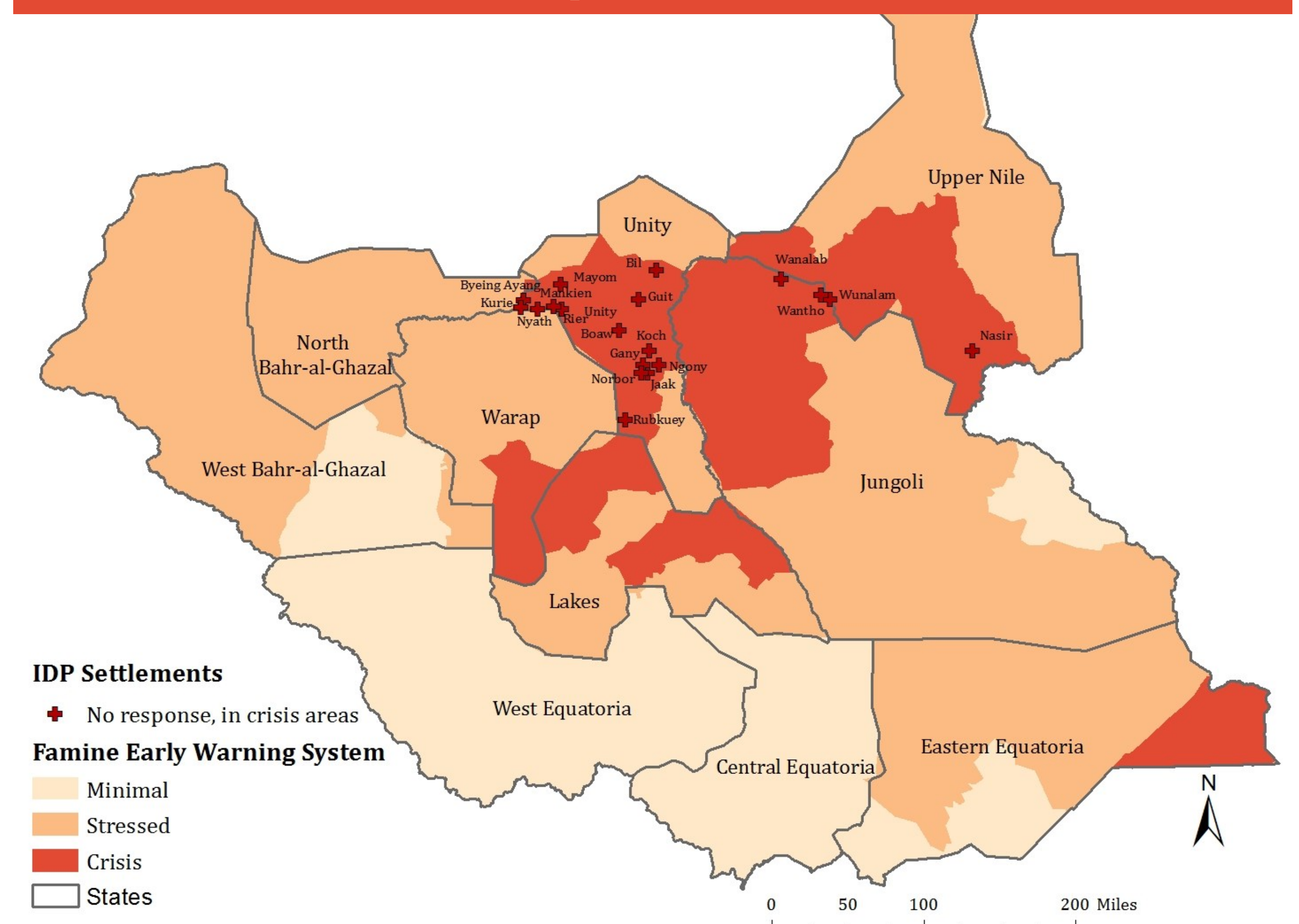
Further research is required to determine what factors make a settlement more likely to receive a humanitarian response. Additionally, incomplete data on the conditions of airfields and the quality of roads might affect the utility of this analysis. In deciding which IDP settlements to target for immediate assistance, humanitarians should consider the size of the population in need (in addition to its accessibility). Sites listed as "no caseload at the moment" should be monitored for influxes of IDPs as the conflict and resulting food insecurity progresses.

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Course: Intro to GIS, DHP-P207
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Projection: Transverse Mercator, WGS 1984 UTM Zone 35N
Data Sources: UN OCHA South Sudan, "Humanitarian Response Status by IDP Site, January 2014-January 2015," February 2015. Famine Early Warning System (FEWS NET) "South Sudan Food Security Outlook," March 3, 2015. African Development Bank, "South Sudan Roads," March 2012. UNITAR, "UN Utilized Relief Airfields throughout Sudan," 2011. GADM, "Sudan." ESRI Base-map, "Africa." African Development Bank, "South Sudan Roads."

Overview of IDP Settlements in South Sudan



IDP Settlements with No Response in Crisis Areas



Methodology

First I mapped the FEWS NET risk projections (minimal, stressed, and crisis) and all IDP settlements throughout South Sudan (bottom left map). I used the spatial join tool to determine how many IDP settlements that are categorized as "no response" are in each risk area (pie chart). Second, I again the select by location tool to determine all the IDP settlements within the crisis area that are not currently being serviced by the humanitarian aid community (bottom right map). Third, I conducted a point distance analysis to determine whether an IDP settlement's distance from a UNDP airfield affects the likelihood that the settlement is being serviced (middle left table). Finally, I used the buffer tool to create a 2 kilometer buffer around all the roads in the crisis area and then selected by location to determine the settlements that will be most in need and are also most accessible by air and road. The final map (top right) shows IDP settlements in projected crisis areas that are not being serviced by the humanitarian community and are within 2 kilometers of a road, as well as UNDP airfields in the crisis area that are also within 2 kilometers of a road.