**Title:** Community Vulnerability Analysis and Early Warning System

**Objective:** To visualize community vulnerability indicators that projects early warning and decision-making for timely interventions across districts in Malawi

**Tool Used:** Microsoft Power BI

**Date Created:** August 2025

**Data Sources Used :** Malawi Food Consumption Survey**;** Wikipedia

**Methods Used**

* Downloaded all data needed. Datasets on Nutrient Adequacy Consumption for each region; Composite Index which has five indices under it and also extracted the food consumed for each nutrient and region.
* Merge the data accordingly

1. All Composite Vulnerability Index data was merged
2. All Nutrient consumption adequacy was merged into a table, having all my nutrients in a table with their corresponding regions
3. Append the rows of each adequacy composition nutrient table for heads of households’ gender to form a table.

* Four pages were included in my report. The first three are interactive dashboards in which each is specialized for the three main vulnerability indicators under consideration. The last one is the narrative tooltip which covers for the insights.

**Key Metrics defined**

1. Climate Exposure Indicators
2. National Average Per Capita Food consumption index = Average of Per Capital food consumption index
3. Composite Risk Score = Average of Composite Vulnerability Index
4. Resilient Diet Threshold = Average of Mean Nutrient Adequacy Rate
5. Nutrient Adequacy
6. Average Nutrient Adequacy = the Nutrient Adequacy is calculated for each nutrient using measure, and from this I was able to derive my average nutrient adequacy
7. Lowest adequacy Nutrient = the Nutrient Adequacy measures also gave me this information using the minimum value
8. Adequacy difference in Gender households = Difference between male headed HH adequacy and female headed HH adequacy
9. Food Security
10. Cost Efficiency = It is used to measure how much is paid for each % percentage of nutrient contribution. It is calculated as Unit Price/% Nutrient Share
11. Nutrient Density: It is for measuring how much nutrient you are getting per unit of each item. It is calculated as % Nutrient Content/ Unit Price

**Limitations:**

1. Some regions lacked complete data on Top Five Product consumed for specific nutrients.
2. Data on top food products for Zinc is missing for Ntcheu and Balaka.
3. No data at all for Zomba and Nkahata Bay on Top Food products