**EWE in Mozambique**

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|  | **Research Question** | **Suggested Method** |
| 1 | Did cyclone exposure affect vaccine coverage? | Interrupted Time Series, Difference-in-Differences, Regression Models |
| 2 | What factors influence post-cyclone vaccination rates? | Logistic Regression, Poisson Regression, Cox Proportional Hazards Model |
| 3 | How does the vaccine coverage disruption from the cyclone impact diarrheal cases |  |

**Datasets:**

1. **Vaccine coverage dataset:**

* BCG (tuberculosis)
* IPV (inactivated polio virus)
* PCV (pneumococcal conjugate vaccine)
* Pentavalent vaccine (diphtheria, tetanus, whooping cough, hepatitis B and Haemophilus influenzae type B)

1st dose – 6 weeks old  
2nd dose – 3 months old  
3rd dose – 6 months old

* Polio Vaccine
* Rota vaccine

1st dose – 2 to 4 months (2-3)

2nd dose – 3 to 6 months (4-8) (complete vaccination)

* MR vaccine (measles and rubella)

1. **Weather dataset:**

* M2 –> what do cases refer to (different case count of under & over 5)
* Diarrhea\_EWE
* Malaria & Diarrhea 2016-2022
* Cyclones (administrative level of the affected area)

**To Do:**

* Vaccine Coverage for infants (7 total vaccines-> graphs all coverage)
* Rota vaccine ( 2 doses -> 2 graphs, assume that second dose is complete vaccine)
* Under 5 graphs of all-case diarrhea (weekly reporting) (+ cyclone)
* Under 5 graphs of all case diarrhea + all weather indicators (temp, precip, humidity) – 1 week lag (?)
* Could add EWE as an event in the above graph
* **Problems in the datasets:**
* There is no vaccine data for Sofala province, Zambezia, Inhambane, Cabo Delgado
* Vaccine data + cyclone events -> Niassa, Nampula, Tete, Gaza, Manica

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| **Database** | **Data to be included in analysis** | **Geographic unit** | **Time unit** | **Areas covered** | | **Data period covered** | **Data source** | |
| EPI administrative vaccine coverage | Projected estimates of the number of vaccine eligible children (aged 0-11 months); number of doses given for BCG, IPV, PCV 1st dose, PCV 3rd dose, Penta 1st dose, Penta 3rd dose, Polio 1st dose, Polio 3rd dose, Rota 1st dose, Rota 2nd dose, MR. | District, province | Month | | All provinces of Mozambique | 2017-2022 | | Mozambique EPI |
| Occurrence of (diarrheal) disease | Number of cases of diarrheal diseases (by all causes) in different age groups: children under 5 years and pop. above 5 years | District, province | Week | | All provinces of Mozambique | 2017-2022 | | SIS-MA (DHIS2) |
| Occurrence of malaria | Number of cases of malaria in different age groups: children under 5 years and population above 5 years | District, province | Week | | All provinces of Mozambique | 2017-2022 | | SIS-MA (DHIS2) |
| Number of homes destroyed by cyclones and extreme weather | Number of houses partially and completely destroyed collected by INGD during and after the extreme weather events | District, province | Month | | All provinces of Mozambique | 2017-2022 | | INGD database |
| Number of lightning registered between 2017 - 2022 | Minimum, mean and maximum of meteorological data registered by National Institute of Meteorology/Satellite data (ERA5) during the extreme weather events | District, province | Week | | All provinces of Mozambique | 2017-2022 | | INGD,INAM&INE |
| Number of Storm surge and their magnitude | Number of Lightning registered by National Institute of Meteorology/Satellite data (ERA5) during the extreme weather events | District, province | year | | All provinces of Mozambique | 2017-2023 | | INAM |
| WASH | Access to water supply and access to sanitation at HCF and households, including Proportion of population using improved drinking water sources; proportion of population using improved sanitation and Percentage of people in the population who practice open defecation | District, province | Week | | All provinces of Mozambique | 2017-2022 | | **MIS 2018, IDS 2022** MISAU&MOPHRH |
| Sociodemographic information | Proportion of population by age group; percentage of rural and urban population by province; level of education; family income; and level of migration | District, province | Month | | All provinces of Mozambique | 2017-2022 | | INE (Census 2017 and projections) |
| Mortality due to extreme weather | Number of deaths registered during/after and due to extreme weather event, collected by the INGD | District, province | Month | | All provinces of Mozambique | 2017-2023 | | INGD |