Province level estimates and credible intervals for selected reproductive, maternal, newborn, child, and adolescent health and development indicators for 2010 (DHS-VI) and 2021 (DHS-8) Burkina Faso and their change over time, version 1.0

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Release Content and Descriptions

DHS_VI_8_BF_indicators_and_CI_province.gpkg
DHS_VI_8_BF_indicators_and_CI_province.csv

Anaemia

The proportion of women age 15-49 with mild, moderate or severe anemia or with any anemia. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

ANC_4plus

The proportion of women with a live birth in the five years preceding the survey and who had four or more antenatal care visits. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

ANC_blood

The proportion of women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth with blood sample taken. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional

variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

ANC_iron

The proportion of women with a live birth in the five years preceding the survey who received iron tablets or syrup during antenatal care The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

ANC_timing

The proportion of women who had a live birth in the five years preceding the survey whose first antenatal care visit was at less than 4 months. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

ANC_urine

The proportion of women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth with urine sample taken. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

C_Prev

The proportion of currently married or in union women currently using any modern method of contraception. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the

change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Child_m_20_24

The proportion of women whose first marriage or consensual union occurred before the age of 18 over women aged 20-24. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Child_m_15_49

The proportion of women whose first marriage or consensual union occurred before the age of 15 over the full sample of women aged 15-49. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Exclusive_BF

The proportion of youngest children under 6 months who are living with their mother who are exclusively breastfed under 6 months of age. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Labour_fem

The proportion of currently married or in union women employed in the 12 months preceding the survey. The indicator includes those who worked in the past year, those who were currently working and those who have a job but were on leave over the last 7 days. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Low_BW

The proportion of live births in the 5 years preceding the survey that weighed at birth reported as less than 2.5 kg. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Min_diet

The proportion of children aged 6-23 months who received a minimum acceptable diet. This indicator is a composite of children fed with a minimum dietary diversity and a minimum meal frequency. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

NAR_prim

The proportion of primary school aged children attending primary school. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

NAR_sec

The proportion of secondary school aged children attending secondary school. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Stunting

The proportion of children under 5 years old stunted (below –2 standard deviations of height-for-age according to WHO standard). The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Teen_Pregn

Proportion of women 15 to 19 years old who had given birth or were pregnant with their first child over the full sample of women aged 15 to 49. The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Wash_sanit

The proportion of the population with access to improved toilet facilities (Improved sanitation facilities include flush toilet, pit latrine (with at least a slab) or a composting toilet). The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Wash_water

Percentage (%) of the population with access to improved drinking water (Improved sources of drinking water include water piped into dwelling or yard/plot, to a neighbour, access to a public tap/standpipe, tube well or borehole, protected well, protected spring, rainwater, tanker truck, cart with small tank and bottled water). The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

Wasting

Proportion of children wasted (below to 2 SD of weight-for-height according to the World Health Organisation's (WHO) standard). The province level estimates including mean, lower 95% credible interval (L), upper 95% credible interval (U) are aggregated from high resolution outputs of models using data collected during DHS-VI (R1), DHS-8 (R2), and the difference between both surveys (CH) defined as round 2 - round1. Additionally, for the change between the surveys, an additional variable (P) is included, which represents the probability that the true change in the indicator is greater than 0.

License

Suggested Citation

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Source Data

This work is based on the Burkina Faso Demographic Health Survey VI (DHS-VI) 2010 and the Burkina Faso (DHS-8) 2021. The 2010 and 2021 Burkina Faso DHS-VI and DHS-8 were conducted by [1, 2]. Microdata and more information can be found here: https://dhsprogram.com// and on relevant Country Reports [1,2]. The datasets [7] were accessed from the DHS spatial repository [8].

Indicators were adapted from the open-source code shared by the DHS Program Code Share Project (https://github.com/DHSProgram) [3].

Boundary data is taken from Population Division, U.S. Census Bureau. The U.S. Census Bureau's products are open access and can be accessed from https://www.census.gov/geographies/mapping-files/time-series/demo/international-programs/subnationalpopulation.html

Population data is from Worldpop Burkina Faso unconstrained population raster 1km resolution for 2010 and 2020. [6]

Methods Overview

We constructed spatial binomial generalised linear models for selected health and development indicators collected from 2010 (DHS-VI) and 2021 (DHS-8) Burkina Faso along with geospatial covariates representing geographical, environmental, and socioeconomic factors that are known to influence the indicators. The constructed models are then fitted in the Bayesian framework using the Integrated Nested Laplace Approximation – Stochastic Partial Differential Equations (INLA-SPDE) method [5, 6]. From these models, posterior samples of the grid level estimates (1x1Km) for the whole of Burkina Faso are produced for each indicator at both round 1 (DHS-VI) and round 2 (DHS-8) and the change between round 1 and round 2 (round2 – round1). These posterior samples are then aggregated using province boundaries taken from US Census Bureau. The aggregation process weights the grid level posterior samples by population. This aggregation results in posterior samples of estimates for each indicator and time point at province level. From these posterior samples, mean and lower and upper 95% credible intervals for the estimates at province level are calculated. Additionally for the estimates of the change in the indicator a further variable is produced identifying the probability that the value of the true change is greater than 0. This is calculated as the proportion of the posterior samples which are greater than 0.

The code to produce these outputs is available at https://doi.org/10.5281/zenodo.14217827

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