

Data Release Notes

Name of the dataset	GRID3 COD - Health Zones v8.0
Name of the file	GRID3_COD_health_zones_v8_0.gpkg
Date of data release	December 22, 2025
File format	OGC Geopackage
Dataset version	8.0
Abstract	<p>This document outlines the methodology and data sources used for constructing the <i>GRID3 COD - Health Zones v8.0</i> dataset. The dataset consists of health zone boundaries with name and other related attributes for all the twenty-six provinces in the Democratic Republic of the Congo (COD). Limitations and use constraints are provided.</p> <p>The current version supersedes the GRID3 COD - Health Zones v7.0. The following changes were made:</p> <ul style="list-style-type: none"> • Added data for the provinces of Bas-Uele, Haut-Uele, Kwango, and Nord-Kivu • The data for Tanganyika was updated.
Dataset citation	Center for Integrated Earth System Information (CIESIN), Columbia University, Ministère de la Santé Publique, Hygiène et Prévention, Democratic Republic of the Congo, and GRID3. 2025. GRID3 COD - Health Zones v8.0. New York: Columbia University. https://doi.org/10.7916/asa4-jc67 . Accessed <DAY MONTH YEAR>.
Terms of use	<p>Users are free to use, copy, distribute, transmit, and adapt the work for commercial and non-commercial purposes, without restriction, as long as clear attribution of the source is provided.</p> <p>Copyright 2025. The Trustees of Columbia University in the City of New York.</p>
Data license	The data and accompanying document are licensed under a Creative Commons Attribution 4.0 International License, CC BY 4.0 (http://creativecommons.org/licenses/by/4.0) and specified in legal code (http://creativecommons.org/licenses/by/4.0/legalcode).
Contacts and data queries	The authors of this dataset appreciate feedback regarding the data, including suggestions, discovery of errors, difficulties in using the data, and format preferences. For dataset-related questions, please send an email to: info@ciesin.columbia.edu

I. Data inputs / methodology

To create this dataset, CIESIN designed a consistent data schema and methodology to harmonize information from twenty-six provinces, organized into eleven groups. These groups are based on the order in which the original data were collected, though the sequencing may not be consistent across all groups.

- Province group 1: Haut-Katanga, Kasai, Kasai-Oriental, Kinshasa, and Lomami
- Province group 2: Haut-Lomami (updates) and Tanganyika
- Province group 3: Ituri and Kwilu
- Province group 4: Maniema
- Province group 5: Kasai-Central
- Province group 6: Tshopo and Mongala
- Province group 7: Haut-Katanga, Kasai, and Kasai-Oriental; Sankuru
- Province group 8: Kongo-Central
- Province group 9: Lualaba, Mai-Ndombe, Sud-Ubangi, Tshuapa
- Province group 10: Equateur, Nord-Ubangi, Sud-Kivu
- Province group 11: Bas-Uele, Haut-Uele, Kwango, and Nord-Kivu

Province Group 1: Haut-Katanga, Kasai, Kasai-Oriental, Kinshasa, and Lomami

From January to July 2021 with the support of provincial and national health authorities, local healthcare workers (“head nurses”, “health zone management staff”, and “head doctors of the health zones”) and GRID3 GIS specialists (“mappers” and “provincial coordinators”) engaged in a participatory mapping process in Haut-Katanga, Kasai, Kasai-Oriental, Kinshasa, and Lomami. This mapping process occurred at the level of the health zone (an operational unit made up of approximately 15-20 health areas).

Mappers were deployed to health zones in teams of two for approximately nine days where they trained the health area head nurses on data collection using the Geospatial Tracking System (GTS), an Open Data Kit (ODK)-based application. The head nurses routinely work in their respective areas and have a good understanding of the location and names of health facilities, settlements, and points of interest (POIs, such as schools and religious centers) within their health (or catchment) areas.

While the head nurses collected data in their health areas, the mappers worked with the health zone management team to validate and modify data from the field. After all data were collected, cleaned, and integrated into final geospatial layers, the health zone head doctor validated the preliminary data. From July 2021 through October 2022, the mappers and provincial coordinators worked with CIESIN staff to consolidate the data (i.e. spelling errors, gaps and overlaps, other inconsistencies). These data were used to produce basemaps at the health area-level and shared back with every health zone and province for a second round of validation.

From November 2022 through January 2023, the in-country GIS team worked with CIESIN staff to integrate these corrections into a final geodatabase. Final health zones polygons were generated by dissolving health areas based on the corresponding attribute.

This work was done with the participation and supervision of the Direction du Système National d'Information Sanitaire (DSNIS). The Agence Nationale d'Ingénierie Clinique, de l'Information et de l'Informatique de Santé (ANICiS) also played an important role in the area of data governance. This work was part of the GRID3 Mapping for Health project.

Province Group 2: Haut-Lomami and Tanganyika

The Haut-Lomami and Tanganyika health area data were originally created through an extensive fieldwork exercise from July to September 2019 with additional data added from the National Malaria Elimination Programme in the DRC (PNLP). Subsequent updates were incorporated in Haut-Lomami Province in 2025.

Table 1: Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Programme de Santé Intégré de l'USAID en la République Démocratique du Congo (PROSANI USAID)	Tabular	2018-2020
Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP)	Spatial points	2019
Programme Elargi de Vaccination (PEV) and Acasus	Spatial points	2019-2024
École de Santé Publique de Kinshasa (ESPK) and University of California, Los Angeles (UCLA).	Spatial points	2021
Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health.	Spatial points	2021
Programme National de Lutte Contre le Paludisme (PNLP) and SANRU	Spatial points	2024
GRID3, Programme Elargi de Vaccination (PEV) and Acasus	Spatial points and qualitative feedback	2024-2025
Organisation Mondiale de la Santé (OMS) and Direction du Système National d'Information Sanitaire (DSNIS)	Tabular	n.d

Phase 1: 2019 Field data collection

With the support of provincial and national health authorities, local healthcare workers and GRID3 GIS specialists engaged in a participatory mapping process in Haut-Lomami and Tanganyika from July to September 2019. This mapping process occurred at the health zone level.

Mappers were deployed to the health zones, where they organized participatory mapping meetings with local healthcare workers. They also trained head nurses to collect data on settlements, health facilities, and other points of interest in their respective health areas using an ODK-based application. Mappers then used this information to delineate health area boundaries, using previously existing data to guide this effort. These data were then sent back to CIESIN for additional quality checks.

Phase 2: Integration of data from the PNL

In October 2021, GRID3 received access to a large geospatial dataset collected during a bednet distribution campaign by IMA World Health. This dataset was combined and consolidated with previous GRID3 settlement data for Haut-Lomami and Tanganyika. The health zone and health area boundaries were then refined based on the health area and health zone attributes of PNL IMA and the GRID3 friction surface layer (non-published). Health zone polygons were created by dissolving health area boundaries using the corresponding attribute information.

Phase 3: Data Enhancement and Boundary Validation

In 2024, GRID3 collaborated with the PEV and Acasus to map remote and hard-to-reach villages in Haut-Lomami Province that were frequently missed by routine immunization activities. This work was part of a targeted polio vaccination initiative. As part of the effort, the locations and names of underserved villages were collected and processed. Participatory mapping was also conducted to fill-in data gaps, resolve discrepancies, and/or validate health area boundaries using the updated village data. GRID3 processed the PEV/ Acasus data in February 2025, and shared with CIESIN for further integration. As a result, the current dataset now includes all health areas in Haut-Lomami Province, consistent with the DHIS2 database. Health zone polygons were created by dissolving health area boundaries using the corresponding attribute information.

All health areas and health zones in Tanganyika Province are complete and remain unchanged during this phase.

Province Group 3: Ituri and Kwilu

Between 2021 and 2022, GRID3 received PNL data covering the provinces of Ituri and Kwilu. These data consisted of household-level GPS points with village, health area, and health zone attributes; and collected by IMA World Health, an implementing partner of the PNL, during province-wide bed net distribution campaigns. In Ituri, over 1,165,000 household points were received from a bed net distribution campaign conducted in June 2021. In Kwilu, over 1,191,000 household points were received from a bed net distribution campaign conducted in July 2022. These household points were processed and mapped against the GRID3 settlement extents datasets as a way of validation. Further, settlement points were combined with other data sources in order to compile a geodatabase as complete as possible.

CIESIN used the following process to delineate preliminary health area boundaries (see steps below). Subsequently, health areas were dissolved to create health zones, based on the corresponding attributes.

- Assessment of already existing health area boundaries. Available point data available (settlements, health facilities, other points of interest available with relevant attribute information) with health area and health zone attributes were overlaid with the boundaries to determine the percent match and select the best layer available, in concert with the local health authorities. In Kwilu, the 2018 data produced by UCLA on behalf of the PNLTHA - and already integrated into the DSNIS national database - was considered the best available data. In Ituri, a combination of recent WHO and OSM boundary work was used as reference only.
- Creation of a friction surface layer. Several input datasets –e.g. elevation, slope, land cover, water bodies (rivers, streams, permanent bodies of water, lakes, etc.), and road infrastructure (primary, secondary, tertiary road networks) were combined to construct a surface (raster or grid, at ~100 m x 100m resolution) with a travel costs at the pixel level –which quantifies the amount of time that it takes to travel from one point to another. Rivers, permanent bodies of water, or cliffs were used as physical barriers and considered obstacles to be circumvented.
- Inclusion of the best available health areas to the friction layer. In addition to natural and man-made barriers, the best available health area boundaries were added to the friction surface to avoid modifying or redrawing existing boundaries. If extensive work had already been conducted and validated in an area, and only a few points fell outside of the original boundaries, no changes were made to the boundaries, as the amount of data available did not justify modifications. Conversely, if a sufficient quantity of recent and reliable data points fell outside current health area limits, these were adjusted accordingly.
- Creation of village catchment areas. The granularity of the data collected during the ITN distribution campaign of the PNL (door-to-door distribution of bednets) at the provincial scale allowed us to create buffers around each survey location in order to generate village catchment areas (settlement contours).
- Creation of health areas. Each village catchment area was dissolved into health area boundaries based on their health area attribute. Identified shape and alignment were adjusted to match man-made and natural barriers. An additional visual inspection identified and corrected minor issues, while topology could not be fully verified visually—scripts and tools were used to flag and resolve topological, shape, and geometry errors to ensure the boundaries were accurate and topologically correct.
- Preliminary health zone boundaries (pre-alpha) were created by dissolving health area polygons based on health zone attributes. These data were presented to local health officials (Médecins Chefs de Zone, Infirmiers Superviseurs) to make sure all the health zones were complete, and health areas fell within their respective health zone boundaries - and/or to make the necessary adjustments when necessary.

In Kwilu, the data were verified through fieldwork organized in October 2022. Two GRID3 mappers traveled to Kikwit and Bandudu, respectively, to present the cartographic improvements driven by the use of the PNL data and to verify that the boundaries were correctly delineated. The majority of this work was carried out in collaboration with both antenna and provincial level staff.

In Ituri, the data were verified through fieldwork also in October 2022. Four GRID3 mappers traveled to Bunia and Aru, respectively, to validate the health area boundary data in all health zones. GRID3 mappers worked with local health teams, where boundary layers were validated and edited. All data modifications from both provinces were sent back to CIESIN for final verification before publication. CIESIN ensured that the final layers were free of spelling and topological errors.

Province Group 4: Maniema

The Maniema data were created through an extensive fieldwork data collection conducted by the Kinshasa School of Public Health (Ecole de Santé Publique de Kinshasa, ESPK) and supplemented with additional data from the PNLP.

Table 2: Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Pre-Distribution Registration Survey (PDRS) from the National Malaria Control Programme (PNLP) collected as part of the anti-malaria campaigns in the Democratic Republic of the Congo	Polygons produced from spatial points	2023
Fieldwork data collected by the Kinshasa School of Public Health (ESPK) in collaboration with GRID3 and CIESIN.	Spatial points and qualitative feedback	2024

Phase 1: Integration of data from the PNLP

In October 2021, CIESIN received access to a large settlement point dataset collected during a bednet distribution campaign by IMA World Health. These dataset were explored, cleaned, and matched against health area and health zone lists within DRC's DHIS2. This attribute information was used to produce a preliminary, draft boundary to be validated with the help of local and provincial health authorities.

Phase 2: Field data collection

ESPK with the support of provincial and national health authorities, local healthcare workers and GRID3 GIS specialists engaged in data collection from October 2023 to January 2024. GRID3 GIS specialists were deployed to each health zone, and liaised with local authorities and health workers to validate the list of health areas within each health zone and validate (or make corrections) to the preliminary draft boundary produced in Phase 1. Corrections were sent back to CIESIN for processing and quality checks, and validated against point-data attributes collected as part of the same fieldwork.

Province Group 5: Kasai-Central

A comprehensive geospatial survey was conducted by ESPK between March and May 2024 in collaboration with GRID3 and partners. Similar as with Maniema, the survey team collected names,

geospatial locations, and relevant attribute information of spatial points to create health zones and health areas.

Table 3: Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Data collected in the field between March - May 2024 by the Kinshasa School of Public Health (ESPK) in collaboration with GRID3 and CIESIN.	Polygons produced from spatial points	2024

CIESIN delineated health area boundaries by clustering attribute information contained in the data collected in the field. Natural features such as rivers and ridges, as well as roads and railroad lines were considered as barriers to delimit boundaries, when applicable. GIS tools/ environments were used to clean topology and isolated attribute errors, harmonize and standardize data, and resolve other geometry discrepancies. Spatial polygons were matched against the national DHIS2 database to ensure full interoperability across databases. Once clean health areas were obtained, they were dissolved based on attribute information to create clean health zones.

A consistent data schema prioritizing information preservation was also developed to include data fields as per common use cases. A standardized data schema will enable seamless integration across subsequent versions of GRID3 health zone datasets in the DRC.

Province Group 6: Tshopo and Mongala

The Tshopo and Mongala data were added through an extensive fieldwork data collection conducted by ESPK and supplemented with additional data from the PNLP.

Table 4: Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Pre-Distribution Registration Survey (PDRS) from the National Malaria Control Programme (PNLP) collected as part of the anti-malaria campaigns in the Democratic Republic of the Congo	Polygons produced from spatial points	2021 - Tshopo 2023 - Mongala
GRID3 COD - Tshopo and Mongala - Health Areas - Unpublished	Polygons produced from spatial points	2024
Health Zones database from DHIS2, downloaded in October 2024.	Tabular	2024 ¹

¹ The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

Phase 1: Integration of data from the PNLP

We delineated health boundaries by clustering attribute information about health areas and health zones contained within the Pre-Distribution Registration Survey (PDRS) data from the National Malaria Control Programme (PNLP), collected in Tshopo and Mongala in 2021 and 2023 respectively. We utilized this preliminary dataset as the baseline during fieldwork.

Phase 2: Field data collection and data processing

ESPK with the support of provincial and national health authorities, local healthcare workers (i.e. head nurses, health zone management staff, and head doctors of the health zones), and GRID3 GIS specialists engaged in data collection from March to May 2024. GRID3 GIS specialists were deployed to each health zone, and liaised with local authorities and local health workers to validate the list and geometry of health areas within each health zone. Corrections were sent back to CIESIN for processing.

CIESIN consolidated both PNLN and fieldwork data, giving priority to the latter. We considered natural features such as rivers and ridges, as well as roads and railroad lines as barriers to delimit borders, when applicable. We used GIS tools/ environment to clean topology and isolate attribute errors, harmonized and standardized data, and resolved other geometry discrepancies. We also matched the spatial polygons against the national DHIS2 database to ensure interoperability across databases. Once we obtained clean health areas, we dissolved them based on attribute information and created clean health zones. The current dataset has not been adjusted against neighboring, provincial boundaries previously released by GRID3, yet.

A consistent data schema prioritizing information preservation was also developed to include data fields as per common use cases. A standardized data schema will enable seamless integration across subsequent versions of GRID3 health zone datasets in the DRC.

Province Group 7: Haut-Katanga, Kasai, Kasai-Oriental, Mongala, and Sankuru

Table 5: Data sources

Source Name/ Description	Data Type/Format	Input Data Year
GRID3 COD - Haut-Katanga, Kasai, Kasai-Oriental, Sankuru - Health Areas - Unpublished	Polygons produced from spatial points	2024
Health Zones database from DHIS2, downloaded in October 2024.	Tabular	2024 ²

² The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

A data gap analysis was conducted in Haut-Katanga, Kasai, and Kasai-Oriental to guide fieldwork plans in these three provinces using existing data from 2021–2022. The Sankuru data collection, completed by GRID3, was incorporated through extensive fieldwork and further supplemented with additional data from the PNLP.

Health zone boundaries were created by spatially dissolving health area polygons based on health zone information. This process was a collaborative effort between CIESIN and GRID3, utilizing the GRID3 COD - Haut-Katanga, Kasai, Kasai-Oriental, Sankuru - Health Areas - Unpublished dataset.

CIESIN conducted rigorous quality checks to ensure consistency in the geometry and attributes across the spatial data layers for all four provinces. The data were also cross-referenced with the DHIS2 database to ensure interoperability and standardized to align with the pre-defined GRID3 data schema, facilitating seamless integration with previously released health area datasets.

Tshopo and Mongala data were updated based on the feedback provided from workshops conducted.

Province Group 8: Kongo-Central

In 2024, GRID3 received PNLP data covering the province Kongo-Central. These data, collected by SANRU between December 2023 and February 2024, consists of 1,048,576 household-level GPS points with village, health area, and health zone attributes. The data were pre-processed and mapped against the GRID3 settlement extents datasets for cleaning and validation.

Table 6: Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Health Areas database from DHIS2, downloaded in November 2024	Tabular	2024 ³
GRID3 COD Kongo Central - Health Areas Unpublished	Polygons produced from spatial points	2025

CIESIN first generates health area boundaries, which serve as the foundational geographic units; health zone polygons are subsequently derived by dissolving these health area geometries based on the shared health zone attribute.

The following process below describes the delineation of health area boundaries:

- We generated small catchment areas at the village level using a previously developed friction surface (see Province Group 3) to define the mini- polygon boundaries. These catchments were then dissolved based on health area attributes provided in the dataset. A visual inspection was conducted to identify and correct minor issues. Additionally, scripts and automated tools were

³ The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

used to flag and resolve topological, shape, and geometry errors, ensuring that the final boundaries are both accurate and topologically sound.

- Health area boundaries from [HDX](#)⁴ were used as a reference layer to assess the spatial accuracy of the output and to flag potential discrepancies.
- The resulting health areas were cross-referenced with the DHIS2 master list to retrieve the corresponding health area and health zone codes for the province.
- Finally, health zone polygons are created by dissolving health area boundaries using the corresponding attribute information.

The health area and health zone dataset for Kongo-Central Province is currently incomplete and may contain inaccuracies. For details on missing health areas and zones, please refer to *Section III: Known Data Limitations and Disclaimer*.

Province Group 9: Lualaba, Mai-Ndombe, Sud-Ubangi, and Tshuapa

Table 7- Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
GRID3 COD Lualaba, Mai-Ndombe, Sud-Ubangi, Tshuapa - Health Areas, Unpublished	Polygons produced from spatial points	2025
Health Areas database from DHIS2, downloaded in June 2025	Tabular	2025 ⁵

Health zone boundaries were created by spatially dissolving health area polygons based on health zone information. This process was a collaborative effort between CIESIN and GRID3, obtaining qualitative feedback directly from provincial health authorities and other key informants.

CIESIN and GRID3 conducted rigorous quality checks to ensure consistency in geometry and attributes across the spatial data layers. The data were also cross-referenced with the DHIS2 database to ensure interoperability and standardized to align with the pre-defined GRID3 data schema, facilitating seamless integration with previously released health area datasets.

⁴ Contributors to this dataset include OpenStreetMap (OSM), Division du Système National d'Informations Sanitaires in the DRC (DSNIS), Médecins Sans Frontières (MSF), World Health Organization (WHO) and Action Contre la Faim (ACF). The dataset used is dated 2022, downloaded from <https://data.humdata.org/dataset/drc-health-data>

⁵ The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

Province group 10: Equateur, Nord-Ubangi, Sud-Kivu

Table 8- Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Health Areas database from DHIS2, downloaded in June 2025	Tabular	2025 ⁶
GRID3 COD - Health Areas v7.0 Unpublished	Polygons produced from spatial points	2025

Health zone boundaries were created by spatially dissolving health area polygons based on health zone information. This process was a collaborative effort between CIESIN and GRID3, obtaining qualitative feedback directly from provincial health authorities and other key informants.

CIESIN and GRID3 conducted rigorous quality checks to ensure consistency in geometry and attributes across the spatial data layers. The data were also cross-referenced with the DHIS2 database to ensure interoperability and standardized to align with the pre-defined GRID3 data schema, facilitating seamless integration with previously released health area datasets.

Province group 11: Bas-Uele, Haut-Uele, Kwango, and Nord-Kivu

Table 9- Data sources

Source Name/ Description	Data Type/ Format	Input Data Year
Health Areas database from DHIS2, downloaded in June 2025	Tabular	2025 ⁷
GRID3 COD - Health Areas v8.0	Polygons produced from spatial points	2025

Health zone boundaries were created by spatially dissolving health area polygons based on health zone information. This process was a collaborative effort between CIESIN and GRID3, obtaining qualitative feedback directly from provincial health authorities and other key informants.

CIESIN and GRID3 conducted rigorous quality checks to ensure consistency in geometry and attributes across the spatial data layers. The data were also cross-referenced with the DHIS2 database to ensure interoperability and standardized to align with the pre-defined GRID3 data schema, facilitating seamless integration with previously released health area datasets.

⁶ The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

⁷ The download date was used as the input date, although the data compiled in DHIS2 includes references spanning an extended period.

II. Dataset Description

The *GRID3 COD - Health Zones v8.0* dataset consists of spatial polygon data with attribute information (see table 10). The data are available for download in OGC Geopackage format contained in a zip file; a metadata file in XML format and a Data Sources table in CSV format are also included.

Table 10: Codebook

Variable Names	Type	Definition
OBJECTID	numeric	Software- generated unique code
pays	text	Country name: République démocratique du Congo
iso3	text	ISO3 code: COD
province	text	DHIS2 province name
prov_uid	text	DHIS2 province code
antenne	text	Antenne name
zonesante	text	DHIS2 health zone name
zs_uid	text	DHIS2 health zone code
date	text	Year of data collection or last edit/modification
source_acronym	text	Acronyms of the organizations, institutions or programs who were involved in the creation of the data input.
sourceid	text	Unique identifier referring to each specific data input. The sourceid allows users to link each data record with the corresponding source reference in the Data Sources table (included as a separate file).
edit_par	text	Editor of the original data
grid3id	text	Internal GRID3 ID

III. Known Data Limitations and Disclaimer

The spatial accuracy of the health zone data depends on both the quality of the input datasets and the correctness of edits applied throughout the validation process. In general, field-collected data were assumed to represent the most accurate information available. Temporal mismatches may exist between the point datasets and the satellite imagery used for quality assurance. Spelling errors or naming inconsistencies may also occur due to colloquial variations in how locations are referenced in the field.

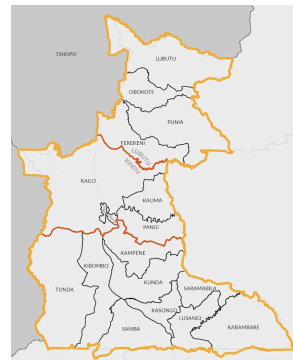
Boundaries in Kwango Province were generated using limited data inputs (no primary data collection took place in the province ; GRID3 did not have access to the most recent PNL data - the only dataset available dated from 2018 ; in addition, only partial health-zone microplans were obtained from the authorities) and may therefore contain unintended errors; users are advised to apply caution when working with these features.

Due to ongoing insecurity in the Nord-Kivu and Sud-Kivu provinces, secondary data collection efforts are generally constrained and therefore less systematic and comprehensive. Enumerators involved in various data collection activities cannot safely access all areas of the provinces. As a result, some data inputs may be incomplete or potentially biased, which may affect the reliability of boundary-related outputs in these highly unstable contexts.

The health zone boundaries produced by GRID3 aim to represent operational health service areas using a bottom-up approach, grounded in the realities faced by health workers and informed by service delivery activities such as bed net distribution campaigns. These boundaries reflect the practical limits of health areas—where services are actually delivered—rather than formal administrative divisions. Consequently, the resulting health zone boundaries do not systematically align with official administrative boundaries. For example, while the administrative boundary in the south of Maniema is formally defined by the 5th parallel south, the GRID3 health zone and provincial boundaries are derived from empirical field data collected and therefore do not follow a straight, geometrically defined line.



Official administrative boundary in southern Maniema



GRID3 operational boundary derived from field-based inputs reported by local and cross-border health areas and health zones.

Similar discrepancies exist along the southern boundary of Kinshasa with Kongo Central, Mai-Ndombe, and Équateur provinces, as well as along the southern boundary of Tanganyika..

Although this dataset includes all 519 health zones present in the latest DHIS2 download, it should be considered operational. It has not yet undergone full validation by government authorities.

CIESIN, Columbia University, and its co-authors follow standardized procedures to ensure that data disseminated through this project meet reasonable quality expectations. If users identify apparent errors or discrepancies in the dataset, they are encouraged to contact CIESIN at info@ciesin.columbia.edu.

CIESIN, Columbia University, its co-authors, and their sponsors do not guarantee the accuracy, reliability, or completeness of the data provided. All data are supplied **without warranty of any kind**, either expressed or implied. The authors shall not be held liable for incidental, consequential, or special damages arising from the use of these data.

IV. Acknowledgments

CIESIN and its co-authors thank the following institutions that provided input data and/or assistance with data production:

Acasus.

Agence Nationale d'Ingénierie Clinique et du Numérique de la Santé (ANICNS).

Bluesquare.

Bureau Central du Recensement (BCR).

Caritas.

Centers for Disease Control and Prevention (CDC).

Direction d'Etudes et Planification (DEP).

Direction des Soins de Santé Primaires (DSSP).

Division du Système National d'Informations Sanitaires (DSNIS).

Division Provinciale de la Santé (DPS) de Bas-Uele, Equateur, Haut-Katanga, Haut-Lomami, Haut-Uele, Ituri, Kasai, Kasai-Central, Kasai-Oriental, Kinshasa, Kongo-Central, Kwango, Kwilu, Lomami, Lualaba, Mai-Ndombe, Maniema, Mongala, Nord-Kivu, Nord-Ubangi, Sankuru, Sud-Kivu, Sud-Ubangi, Tanganyika, Tshopo, et Tshuapa.

Ecole de Santé Publique de Kinshasa (ESPK).

Gates Foundation.

Gavi, the Vaccine Alliance.

Geospatial Evaluation and Observation Lab (geoLab), College of William & Mary.

Global Affairs Canada (GAC).

Global Good.

IMA World Health,

Initiative Régionale de Documentation et d'Accompagnement Communautaire au Développement (IDRAC Sarl).

International Federation of Red Cross and Red Crescent Societies (IFRC).

International Medical Corps (IMC).

Médecins Sans Frontières (MSF).

Ministère de l'Environnement et Développement Durable (MEDD).

Ministère de la Santé publique, Hygiène et Prévention,
Novel-T.

Open Street Map (OSM).

PATH.

Programme Elargi de Vaccination (PEV).

Programme National de Lutte contre le Paludisme (PNLP).

Référentiel Géographique Commun (RGC).

Soins de Santé Primaires en Milieu Rural (SANRU).

The International Organization for Migration (IOM).

United Nations Children Fund (UNICEF).

United Nations Development Programme (UNDP).

United Nations Office for Project Services (UNOPS). Denmark and CO

United Nations Office for the Coordination of Humanitarian Affairs (OCHA).

United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO).

University of California, Los Angeles (UCLA) Health Research and Training Program.

VillageReach.

World Health Organization (WHO) - HQ, AFRO, CO.

World Resources Institute (WRI).

Funding for this work was provided by GRID3 under grants INV-044979 GRID3 - Phase 2 Scaling, and FAE/GRID3/001/2024 Soutien à la mise en oeuvre des activités du Projet de Vaccination des Enfants Zéro Dose du Fonds d'Accélération de l'Équité (FAE) en RDC.

V. Appendix 1 - Data Sources Table

Source Acronym	Sourceid	Citation
BLSQ	BLSQ_001	Bluesquare (compiled by) Health facilities. 2022. Bluesquare - IASO. Accessed in 2022.
CIESIN MSPHP	CIESIN_MSPHP_001	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Haut-Katanga. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed on July 2021.
CIESIN MSPHP	CIESIN_MSPHP_003	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Kasaï-Oriental. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed on July 2021.
CIESIN MSPHP	CIESIN_MSPHP_004	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Kasaï. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed on July 2021.
CIESIN MSPHP	CIESIN_MSPHP_005	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Kinshasa. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed on July 2021.
CIESIN MSPHP	CIESIN_MSPHP_006	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Lomami. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed on July 2021.
CIESIN MSPHP	CIESIN_MSPHP_007	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Kwilu. 2021. GRID3 - Cartographie pour la Santé/ Mapping for Health (M4H). Accessed in 2022.
CIESIN MSPHP	CIESIN_MSPHP_008	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlement names and health facilities - Ituri. 2022. GRID3 - Cartographie pour la

Source Acronym	Sourceid	Citation
		Santé/ Mapping for Health (M4H). Accessed in 2022.
CIESIN MSPHP	CIESIN_MSPHP_009	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: health facilities - Haut-Lomami and Tanganyika. 2019. GRID3 - Mapping Portfolio Accessed on August 9, 2019
CIESIN MSPHP	CIESIN_MSPHP_010	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlements - Haut-Lomami. 2019. GRID3 - Mapping Portfolio Accessed in 2019.
CIESIN MSPHP	CIESIN_MSPHP_011	Center for International Earth Science Information Network (CIESIN) and Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Fieldwork data: settlements - Tanganyika. 2019. GRID3 - Mapping Portfolio Accessed in 2019.
DSNIS	DSNIS_001	Direction du Système National d'Information Sanitaire (DSNIS). Health facilities. n.d. Bluesquare - IASO. Accessed on March 16, 2022.
DSNIS	DSNIS_002	Direction du Système National d'Information Sanitaire (DSNIS). District Health Information System 2 (DHIS2) - Health facilities. 2024. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on November 11, 2024.
DSNIS	DSNIS_003	Direction du Système National d'Information Sanitaire (DSNIS). District Health Information System 2 (DHIS2) - Health facilities. 2025 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on June 17, 2025.
DSNIS	DSNIS_004	Direction du Système National d'Information Sanitaire (DSNIS). Health facilities. 2019 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on May 2020
DSNIS	DSNIS_005	Direction du Système National d'Information Sanitaire (DSNIS). Settlement names 2019 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on May 2020
ESPK	ESPK_001	École de Santé Publique de Kinshasa (ESPK). Enquête de la Couverture Vaccinale (ECV) Chez les Enfants de 6-23 mois - Liste des établissements de santé (2020). 2020 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed in 2022.

Source Acronym	Sourceid	Citation
ESPK	ESPK_002	Ecole de Santé Publique de Kinshasa (ESPK). Enquête de la Couverture Nationale de Vaccination (2021-2022). 2021-2022 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed in 2023.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_001	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Kasai-Central. 2024. GRID3 - Phase 2 Accessed on July 2024.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_002	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Maniema. 2024. GRID3 - Phase 2 Accessed on January 2024.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_003	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Mongala. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on June 2022.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_004	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Tshopo. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on June 2022.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_005	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Sud-Ubangi. 2025. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on April 2025.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_006	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Tshuapa 2025. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on April 2025.
ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_007	École de Santé Publique de Kinshasa (ESPK), GRID3, and Center for Integrated Earth Science Information (CIESIN). Fieldwork data: settlement names, health facilities, and points of interest - Lualaba. 2025 GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on May

Source Acronym	Sourceid	Citation
		2025.
ESPK UCLA	ESPK_UCLA_001	École de Santé Publique de Kinshasa (ESPK) and University of California, Los Angeles. Villages - Kwilu. 2017. Accessed in 2018.
ESPK UCLA	ESPK_UCLA_002	École de Santé Publique de Kinshasa (ESPK) and University of California, Los Angeles. Boundaries - Vaccination Health Areas - Haut-Lomami and Tanganyika 2018. Accessed on October 2018.
GRID3 PEV Acasus	GRID3_PEV_Acasus_001	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: health facilities - Haut-Katanga. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on August 28, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_002	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: health facilities - Kasai-Oriental. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on July 11, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_003	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: health facilities - Kasai. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on July 30, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_004	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: health facilities - Sankuru. 2024. GRID3 - Phase 2. Accessed on October 3, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_005	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: health facilities - Mongala. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on November 25, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_006	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Haut-Katanga. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on August 28, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_007	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Kasai-Oriental. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on July 30, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_008	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Kasai. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on July 11, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_009	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Sankuru. 2024.

Source Acronym	Sourceid	Citation
		GRID3 - Phase 2. Accessed on October 3, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_010	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Mongala. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on November 25, 2024.
GRID3 PEV Acasus	GRID3_PEV_Acasus_011	GRID3, Programme Elargi de Vaccination (PEV) and Acasus. Fieldwork data: settlement names - Haut-Lomami. 2024. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on August 21, 2024.
GRID3 PEV	GRID3_PEV_012	GRID3, Programme Elargi de Vaccination (PEV). Fieldwork data: settlement names - Mai-Ndombe. 2025. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on June 18, 2025.
GRID3 PEV	GRID3_PEV_013	GRID3, Programme Elargi de Vaccination (PEV). Fieldwork data: health facilities - Mai-Ndombe. 2025. GRID3 - Fonds Accélérateur d'Equité (FAE) en RDC. Accessed on June 16, 2025.
IOM	IOM_001	International Organization of Migration (IOM). Displacement Tracking Matrix: Settlements n.d. IOM - Global Data Institute Accessed on July 2020.
MONUC GNS	MONUC_GNS_001	Mission de l'Organisation des Nations Unies en République démocratique du Congo (MONUC GNS) Settlements n.d. Accessed on November 14, 2024.
OMS DSNIS	OMS_DSNIS_001	Organisation Mondiale de la Santé (OMS) and Direction du Système National d'Information Sanitaire (DSNIS). Health facilities. n.d. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed in 2020.
OMS DSNIS	OMS_DSNIS_002	Organisation Mondiale de la Santé (OMS) and Direction du Système National d'Information Sanitaire (DSNIS). Health facilities. n.d. Bluesquare - IASO. Accessed on March 16, 2022.
OMS GPEI	OMS_GPEI_001	World Health Organization (WHO) and Global Polio Eradication Initiative (GPEI) Settlements 2018. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed in 2022.
OMS ISS	OMS_ISS_001	Organisation Mondiale de la Santé (OMS). Health Center Supervision data. 2017-2021. OMS - Integrated Supportive Supervision (ISS). Accessed on March 19, 2021.
OMS ISS	OMS_ISS_002	Organisation Mondiale de la Santé (OMS). Health Center Supervision data. 2017-2021. OMS - Integrated Supportive Supervision (ISS). Accessed on March 19, 2021.

Source Acronym	Sourceid	Citation
PATH GRID3	PATH_GRID3_001	PATH. Health facilities - Haut-Katanga. n.d. Accessed on August 28, 2024.
PEV Acasus	PEV_Acasus_001	Programme Elargi de Vaccination (PEV) and Acasus. Health Center Supervision data. 2019-2024. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on eceember 2024.
PEV Acasus	PEV_Acasus_002	Programme Elargi de Vaccination (PEV) and Acasus. High risk communities - Haut-Katanga and Tanganyika. 2023-2024 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on May 2, 2024.
PEV Acasus	PEV_Acasus_003	Programme Elargi de Vaccination (PEV) and Acasus. Health Center Supervision data. 2025. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Last accessed on August 2025.
PEV CDC CIESIN	PEV_CDC_CIESIN_001	Programme Elargi de Vaccination (PEV), United States Centers for Disease Control and Prevention (CDC), and Center for Integrated Earth System Information (CIESIN). Fieldwork data: health facilities - Maniema. 2022. GRID3 - Mapping Portfolio Accessed on October 10, 2022.
PNLP IMA	PNLP_IMA_001	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Haut-Lomami. 2021. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on January 2022.
PNLP IMA	PNLP_IMA_002	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Ituri. 2021. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on June 2021.
PNLP IMA	PNLP_IMA_003	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Kwilu. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on July 2022.
PNLP IMA	PNLP_IMA_004	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Maniema. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on May 2022.
PNLP IMA	PNLP_IMA_005	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Tanganyika. 2020. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on March 7, 2024
PNLP IMA	PNLP_IMA_006	Programme National de Lutte Contre le Paludisme (PNLP)

Source Acronym	Sourceid	Citation
		and IMA World Health. Pre-Registration Distribution Survey - Sud-Ubangi. 2024. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on December 2024.
PNLP IMA	PNLP_IMA_007	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Nord-Ubangi. 2019. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on October 2021.
PNLP IMA	PNLP_IMA_008	Programme National de Lutte Contre le Paludisme (PNLP) and IMA World Health. Pre-Registration Distribution Survey - Haut-Uele. 2023 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on December 2023.
PNLP SANRU	PNLP_SANRU_001	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Lomami. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on June 2023.
PNLP SANRU	PNLP_SANRU_002	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Sankuru. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on May 2023.
PNLP SANRU	PNLP_SANRU_003	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Kongo-Central. 2024. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on March 2025.
PNLP SANRU	PNLP_SANRU_004	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Haut-Lomami. 2024. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on March 2024.
PNLP SANRU	PNLP_SANRU_005	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Tshuapa. 2023. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on June 2023.
PNLP SANRU	PNLP_SANRU_006	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Mai-Ndombe. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed October 31, 2024
PNLP SANRU	PNLP_SANRU_007	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Equateur. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed June, 2022
PNLP	PNLP_SANRU_008	Programme National de Lutte Contre le Paludisme (PNLP)

Source Acronym	Sourceid	Citation
SANRU		and SANRU. Pre-Registration Distribution Survey - Sud-Kivu. 2022. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed February, 2022
PNLP SANRU	PNLP_SANRU_009	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Bas-Uele 2022 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed February, 2022
PNLP SANRU	PNLP_SANRU_010	Programme National de Lutte Contre le Paludisme (PNLP) and SANRU. Pre-Registration Distribution Survey - Nord-Kivu. 2022 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed March, 2022
PNLP Chemonics	PNLP_Chemonics_001	Programme National de Lutte Contre le Paludisme (PNLP) and Chemonics. Pre-Registration Distribution Survey - Lualaba. 2024 Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on October 29, 2024.
PNLTHA UCLA	PNLTHA_UCLA_001	Programme National de Lutte contre la Trypanosomiase Humaine Africaine (PNLTHA) and University of California, Los Angeles (UCLA). Health facilities - Kwilu. 2018. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed in 2018.
PROSANI USAID	PROSANI_USAID_001	Programme de Santé Intégré de l'USAID en la République Démocratique du Congo (PROSANI USAID). Health facilities - Haut-Lomami. 2018-2020. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on February 5, 2020.
PROSANI USAID	PROSANI_USAID_002	Programme de Santé Intégré de l'USAID en la République Démocratique du Congo (PROSANI USAID). Health facilities - Tanganyika. 2018-2020. Ministère de la Santé Publique, Hygiène et Prévention (MSPHP). Accessed on February 5, 2020.
RGC	RGC_001	Reférentiel Geographique Commun (RGC) Localité 1994-2010. Accessed in 2018.

VI. Appendix 2 - Data Sources Used by Province

Province	Sourceid	Source_ acronym_list	Sourceid_list
Bas-Uele	Bas-Uele_001	DSNIS, PEV Acasus, PNLP SANRU	DSNIS_003, DSNIS_004, PEV_ACASUS_003, PNLP_SANRU_009
Equateur	Equateur_001	DSNIS, OMS ISS, PEV Acasus, PNLP SANRU	DSNIS_003, OMS_ISS_001, PEV_Acasus_001, PEV_Acasus_003, PNLP_SANRU_007
Haut-Katanga	Haut-Katanga_001	CIESIN MSPHP, GRID3 PEV Acasus , PEV Acasus, GRID3 PEV Acasus , PATH GRID3	CIESIN_MSPHP_001, GRID3_PEV_Acasus_006, PEV_Acasus_002, GRID3_PEV_Acasus_001, PATH_GRID3_001
Haut-Lomami	Haut-Lomami_001	CIESIN MSPHP, PNLP IMA, PNLP SANRU, OMS DSNIS, PROSANI USAID, PEV Acasus, CIESIN MSPHP, ESPK UCLA	CIESIN_MSPHP_010, PNLP_IMA_001, PNLP_SANRU_004, OMS_DSNIS_002, PROSANI_USAID_001, PEV_Acasus_001, CIESIN_MSPHP_009, ESPK_UCLA_002
Haut-Uele	Haut-Uele_001	DSNIS, PEV Acasus, PNLP IMA	DSNIS_003, DSNIS_004, PEV_ACASUS_003, PNLP_IMA_008
Ituri	Ituri_001	CIESIN MSPHP, ESPK, OMS GPEI, PNLP IMA, RGC, DSNIS, ESPK, OMS DSNIS, PEV Acasus	CIESIN_MSPHP_008, ESPK_002, OMS_GPEI_001, PNLP_IMA_002, RGC_001, DSNIS_001, ESPK_001, OMS_DSNIS_001, PEV_Acasus_001
Kasaï	Kasaï_001	CIESIN MSPHP, GRID3 PEV Acasus , PEV Acasus, GRID3 PEV Acasus	CIESIN_MSPHP_004, GRID3_PEV_Acasus_008, PEV_Acasus_001, GRID3_PEV_Acasus_003
Kasaï-Central	Kasaï-Central_001	ESPK GRID3 CIESIN	ESPK_GRID3_CIESIN_001
Kasaï-Oriental	Kasaï-Oriental_001	CIESIN MSPHP, GRID3 PEV Acasus , PEV Acasus, GRID3 PEV Acasus	CIESIN_MSPHP_003, GRID3_PEV_Acasus_007, PEV_Acasus_001, GRID3_PEV_Acasus_002
Kinshasa	Kinshasa_001	CIESIN MSPHP	CIESIN_MSPHP_005
Kongo-Central	Kongo-Central_001	PNLP SANRU, PEV Acasus, DSNIS	PNLP_SANRU_003, PEV_ACASUS_001, DSNIS_002
Kwango	Kwango_001	DSNIS, ESPK, OMS ISS, PEV Acasus	DSNIS_003, DSNIS_004, DSNIS_005, ESPK_001, ESPK_002, OMS_ISS_002, PEV_ACASUS_003
Kwilu	Kwilu_001	ESPK, OMS GPEI, PNLP IMA, ESPK UCLA, RGC, BLSQ, DSNIS, PEV Acasus, PNLTHA UCLA, PNLP IMA, OMS ISS, CIESIN MSPHP	ESPK_002, OMS_GPEI_001, PNLP_IMA_003, ESPK_UCLA_001, RGC_001, BLSQ_001, DSNIS_001, PEV_Acasus_001, PNLTHA_UCLA_001, PNLP_IMA_006, OMS_ISS_001, CIESIN_MSPHP_007

Province	Sourceid	Source_ acronym_list	Sourceid_list
Kwango	Kwango_001	DSNIS, ESPK, OMS ISS, PEV Acasus	DSNIS_003, DSNIS_004, DSNIS_005, ESPK_001, ESPK_002, OMS_ISS_002, PEV_ACASUS_003
Lomami	Lomami_001	CIESIN MSPHP, PNLP SANRU	CIESIN_MSPHP_006, PNLP_SANRU_001
Lualaba	Lualaba_001	ESPK GRID3 CIESIN, DSNIS, PNLP Chemonics, PEV Acasus	ESPK_GRID3_CIESIN_007, DSNIS_003, PNLP_Chemonics_001, PEV_Acasus_001
Mai-Ndombe	Mai-Ndombe_001	DSNIS, PNLP SANRU, GRID3_PEV, PEV_Acasus	DSNIS_003, PNLP_SANRU_006, GRID3_PEV_012, PEV_Acasus_001
Maniema	Maniema_001	PNLP IMA, PEV Acasus, ESPK GRID3 CIESIN, PEV CDC CIESIN	PNLP_IMA_004, PEV_Acasus_001, ESPK_GRID3_CIESIN_002, PEV_CDC_CIESIN_001
Mongala	Mongala_001	GRID3 PEV Acasus , ESPK GRID3 CIESIN, GRID3 PEV Acasus	GRID3_PEV_Acasus_010, ESPK_GRID3_CIESIN_003, GRID3_PEV_Acasus_005
Nord-Kivu	Nord-Kivu_001	DSNIS, OMS ISS, OMS DSNIS, PEV Acasus, PNLP SANRU	DSNIS_003, OMS_ISS_001, OMS_DSNIS_001, PEV_ACASUS_003, PNLP_SANRU_010
Nord-Ubangi	Nord-Ubangi_001	DSNIS, OMS ISS, PEV Acasus, PNLP IMA	DSNIS_003, OMS_ISS_001, PEV_Acasus_001, PNLP_IMA_007
Sankuru	Sankuru_001	GRID3 PEV Acasus , IOM, OMS GPEI, PNLP SANRU, DSNIS, PEV Acasus, OMS ISS, CIESIN MSPHP, GRID3 PEV Acasus	GRID3_PEV_Acasus_009, IOM_001, OMS_GPEI_001, PNLP_SANRU_002, DSNIS_002, PEV_Acasus_001, OMS_ISS_001, CIESIN_MSPHP_006, GRID3_PEV_Acasus_004
Sud-Kivu	Sud-Kivu_001	DSNIS, OMS DSNIS, OMS ISS, PEV Acasus, PNLP SANRU	DSNIS_003, OMS_DSNIS_001, OMS_ISS_001, PEV_Acasus_001, PEV_Acasus_003, PNLP_SANRU_008
Sud Ubangi	Sud_Ubangi_001	PNLP IMA, ESPK GRID3 CIESIN, DSNIS	ESPK_GRID3_CIESIN_005, PNLP_IMA_006, DSNIS_002
Tanganyika	Tanganyika_001	CIESIN MSPHP, PEV Acasus, PNLP IMA, OMS DSNIS, PROSANI USAID, PEV Acasus, CIESIN MSPHP, ESPK UCLA, DSNIS	CIESIN_MSPHP_011, PEV_Acasus_002, PNLP_IMA_005, OMS_DSNIS_002, PROSANI_USAID_002, PEV_Acasus_001, CIESIN_MSPHP_009, ESPK_UCLA_002, DSNIS_003
Tshopo	Tshopo_001	MONUC GNS, DSNIS, PEV Acasus, ESPK GRID3 CIESIN	MONUC_GNS_001, DSNIS_002, PEV_Acasus_001, ESPK_GRID3_CIESIN_004
Tshuapa	Tshuapa_001	CIESIN MSPHP, PNLP SANRU, DSNIS	CIESIN_MSPHP_005, PNLP_SANRU_005, DSNIS_002