

GRID3 COD - Spatially Integrated Displacement Datasets v1.0

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Executive Summary

Dataset Overview

This dataset provides a harmonized, geographically detailed view of internal displacement in the Democratic Republic of the Congo (DRC). It brings together multiple sources of data on internally displaced persons (IDPs) and returnees into a single, consistent format that can be used for mapping, planning, and analysis.

The main output is a set of ready-to-use geographic data layers (GIS files). These allow users to visualize and analyze where displaced persons came from, currently are, and how these patterns change over time. The dataset includes a structured database containing the original records, metadata, and information on data quality.

Key features include:

- Inclusion of both IDPs (origin and destination) and returnees, providing a fuller picture of displacement dynamics
- Time coverage from 2022 to 2025, with multiple reporting rounds
- Coverage across multiple administrative levels, including health zones and health areas
- Standardized structure across different data sources

The dataset is built from widely used humanitarian data sources, including OCHA displacement assessment data and various displacement datasets published via the Humanitarian Data Exchange (HDX).

Reliable information on internal displacement is essential for humanitarian planning, service delivery, and policy decisions. However, displacement data is often fragmented, inconsistent, and difficult to combine across sources. This dataset addresses these challenges by:

- Bringing together multiple data sources into a single, harmonized system
- Linking displacement data to the standard high quality GRID3 administrative boundaries, which are commonly used for health and development planning
- Providing quality checked subnational estimates, enabling better targeted interventions

In many contexts, especially in the DRC, it is difficult to align displacement figures with the administrative units used for service delivery (e.g. health systems). This dataset helps bridge that gap, making it easier for decision-makers to understand where displaced populations are located relative to service areas.

How to Use the Data

The dataset is designed to be accessible to both technical and non-technical users, particularly those working with maps or planning tools.

Key elements to understand:

- **IDPs vs Returnees:**
 - o IDPs are people currently displaced from their homes
 - o Returnees are those who have returned after displacement
- **Origin vs Destination:**
 - o Data may show where people came from (origin) and where they are located (destination)
- **Reporting frequency:**
 - o Data is collected in rounds or snapshots, not at regular intervals, so trends should be interpreted carefully

By utilizing the dataset, the users can:

- Map displacement patterns across administrative areas
- Identify hotspots of displacement or return
- Assess the magnitude of potential pressure exerted by population flows on a given local population and resources
- Compare changes over time across reporting rounds
- Combine the data with other datasets (e.g. population, health services)

Methodology Overview

The dataset was created through a multi-step process designed to integrate diverse data sources into a consistent spatial framework. In simple terms, the process involved:

1. **Collating data** from multiple humanitarian sources (e.g. IOM DTM, OCHA/HDX)
2. **Standardizing formats** so that different datasets could be combined
3. **Linking data to geographic boundaries** using:
 - Administrative codes (where available)
 - Geographic coordinates (where provided)
 - A name matching algorithm (to resolve the remaining inconsistencies)
1. **Combining everything into a single database** (statistical distribution of observed IDP totals to subnational boundaries also involving data quality checks)
2. **Producing ready-to-use map layers** for analysis

Considerations for Data Users

While this dataset provides a powerful tool for understanding displacement, users should be aware of several important limitations:

- Incomplete or inconsistent coverage: Not all areas or time periods are equally represented. Missing data does not always mean zero displacement.
- Imperfect geographic matching: Some records are linked to administrative areas using approximations (e.g. name matching based on similarity), which may introduce errors.
- Ambiguity in interpretation:
 - o Absence of data in some areas may mean no data was collected and not necessarily mean 'no displacement'
 - o Uncertainty whether or not IDP totals are included in baseline population/target population estimates
- High relative values: In some cases, IDP estimates may appear very high compared to local population estimates, reflecting data limitations or reporting differences rather than actual proportions.
- Variability across sources and rounds: Different data collection methods and reporting standards can affect comparability over time.

Users are encouraged to:

- Cross-check with original data sources where possible
- Use the dataset alongside other contextual information
- Interpret trends cautiously, especially across different reporting periods

This dataset represents a significant step forward in making displacement data more usable, comparable, and actionable. By integrating multiple sources and linking them to standard geographic units, it enables better-informed humanitarian planning and analysis in this displacement-affected country.

It is designed to support a wide range of users—from analysts and GIS specialists to policymakers and donors—by providing a clear, structured, and accessible spatial view of displacement dynamics at the subnational level.

Overview

GRID3 COD - Spatially Integrated Displacement Datasets v1.0 provides harmonised spatial estimates of internally displaced persons (IDPs) and returnees covering the period 2022–2025.

The dataset was produced by integrating OCHA displacement assessment data with GRID3 administrative and health boundary datasets using an automated spatial harmonisation workflow developed by WorldPop, University of Southampton

Files provided

- **adm3.gpkg:** Health Zones (Admin 3)
- **adm4.gpkg :** Health Areas (Admin 4)

Data Characteristics

- **Coverage period:** 2022–2025
- **Coordinate reference system:** EPSG:4326 (WGS 84)
- **Spatial framework:** GRID3 health zones and health areas
- **Available formats:** csv, GeoJSON, GeoPackage, SQLite

Data Dictionary

General Columns

Column name	Description
rowid	Internal row identifier generated by the GeoPackage/SQLite database
geom	Multipolygon geometry of the administrative unit
id	Internal numeric identifier of the administrative unit.
dhis2_id	DHIS2 identifier associated with the health geography, where available
province	Province name
antenne	Antenne / intermediate health geography name
zonesante	Health Zone name
airesante	Health Area name
grid3_2023_population	GRID3 2023 population estimate for the administrative unit, based on GRID3 COD- Gridded Population Estimates v4.4

Displacement Columns

Displacement columns follow the naming convention:

<population>_<direction>_<YYMM>

The <population> segment is either “idps” (internally displaced persons) or “rets” (returnees).

The <direction> segment is either “orig” (origin location) or “dest” (destination/current location) or “rets” (returnees).

YYMM contains the two-digit year and two-digit month.

Cell values are integer counts of displaced persons. A blank or NULL value indicates that no value was available or generated for that administrative unit and reporting period.

Examples:

- **idps_orig_2503:** Number of IDPs whose origin was reported in this administrative unit in March 2025.
- **idps_dest_2503:** Number of IDPs whose destination/current location was reported in this administrative unit in March 2025.
- **rets_dest_2503:** Number of returnees whose destination/current location was reported in this administrative unit in March 2025.

Limitations and Acknowledgements

Limitations

These datasets are derived products generated through the harmonisation and spatial integration of displacement assessment data and GRID3 administrative and health boundary datasets. They should not be interpreted as official displacement statistics.

The underlying displacement assessments differ in reporting methodology, temporal coverage, spatial precision, and geographic completeness. Consequently, displacement estimates may not be directly comparable across all reporting rounds.

Spatial allocation relies on a combination of administrative identifiers, constrained name matching, and coordinate-based geocoding. While extensive quality assurance procedures were applied, some linkage errors and unresolved records may remain.

Fine-scale outputs generally contain greater uncertainty than higher administrative levels.

Health Area (Admin 4) estimates should be interpreted with additional caution, as displacement records are often reported at coarser administrative levels and must be spatially allocated to smaller geographic units.

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Citation

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@dataset{Noskov2026IDP_COD,  
  author = {Noskov, Alexey and Qader, Sarchil and Lazar, Attila},  
  title = {Spatially Integrated Displacement Datasets for the Democratic Republic of  
the Congo (COD), Version 1},  
  year = {2026},  
  month = {June},  
  publisher = {WorldPop, University of Southampton},  
  doi = {10.5258/SOTON/WP00826}  
}
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