UN GGIM Conference

Implementing geospatial strategies: challenges and opportunities

IOM's DISPLACEMENT TRACKING MATRIX (DTM)

Aligning Geospatial Innovation & Enumeration Strategies for Resilient Displacement Solutions

Maputo, Mozambique, 24-28 March 2025

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1. Context and Strategic Imperative

Global and Regional Frameworks:

UN-IGIF, UN-GGKIC, and the SDG Data Alliance are driving global and regional efforts to integrate geospatial information management by leveraging science, technology, and innovation. Their coordinated strategies accelerate the achievement of the SDGs, enhancing data-driven decision-making and sustainable development globally.

National Relevance for Mozambique:

Despite these efforts from different stakeholders, the realization of the SDG goals has seen slow progress which could have resulted from many other factors. However, efforts and new innovations are being practiced in Mozambique's data landscape focusing on vulnerable population affected by conflict and climate hazards (IDPs and Returnees). Some of these efforts include:

Enhancing Data Quality:
Standardizing data collection (e.g., through defined Enumeration Areas), ensuring that information on IDPs and returnees is reliable, representative, and up-to-date.

Strengthening Decision-making Support:
Integrated geospatial platforms merge diverse data sources—satellite imagery, field surveys, and community inputs—into real-time visualizations and analytics. This empowers policymakers to quickly identify trends and high-need areas.

Optimizing Resource Allocation:
With accurate estimates, actionable data and robust decision tools, the government as well as partners can target interventions more precisely, ensuring that resources are directed efficiently to support vulnerable populations.

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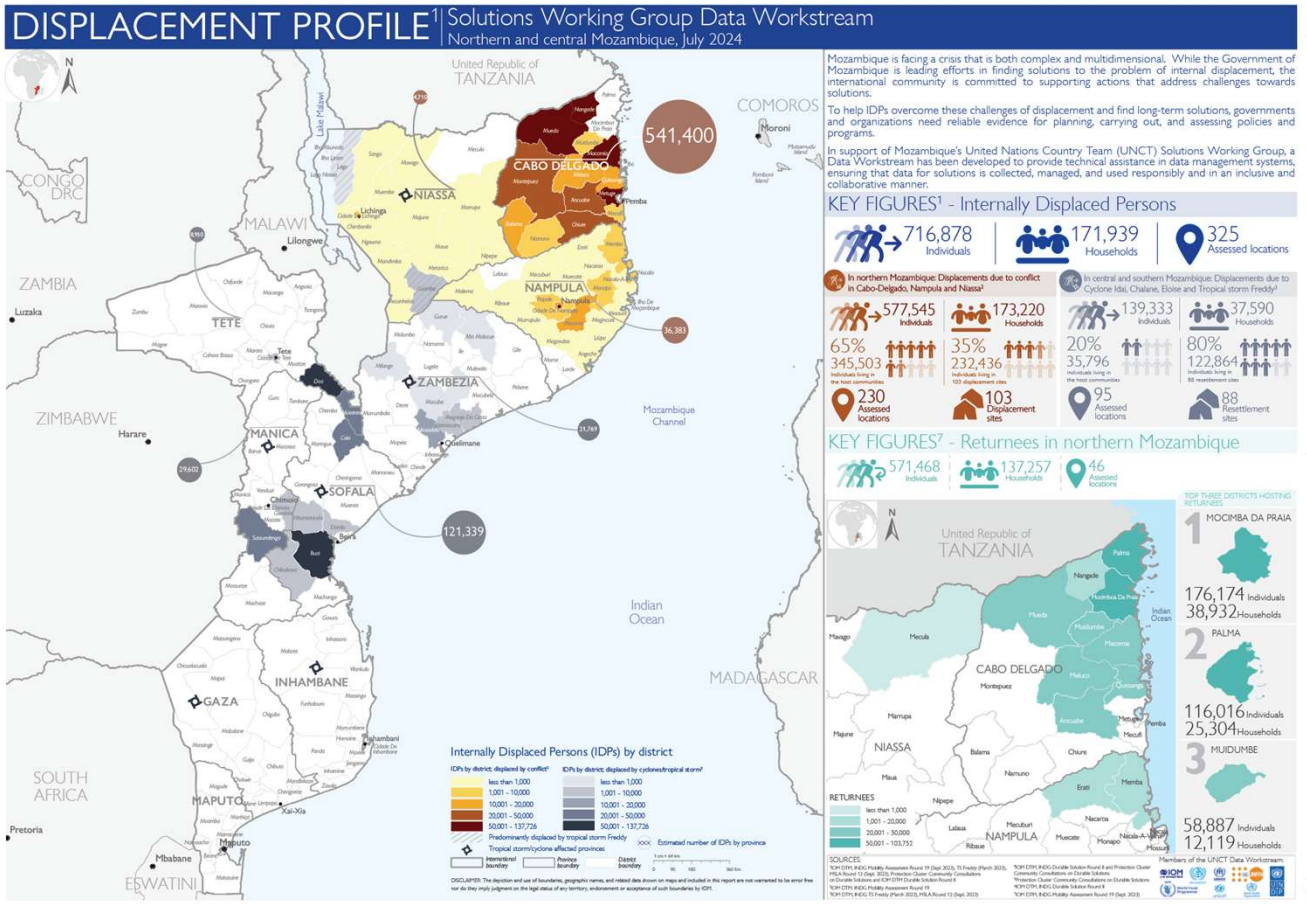
1. Context and Strategic Imperative

Conflict-Induced Displacement:
Ongoing violence in northern Mozambique (Cabo Delgado, Nampula, Niassa) has displaced over 700,000 people, with 80% of internally displaced persons (IDPs) concentrated in these regions. Conflict has led to multiple displacements, with IDPs facing challenges such as food insecurity, inadequate shelter, and limited access to healthcare and education.

Climate-Induced Displacement:
Mozambique ranks as one of the most climate-vulnerable countries globally. Frequent natural disasters (e.g., Cyclones Idai, Kenneth and Gombe) have displaced large populations. Around 69% of IDPs have been displaced multiple times due to recurring extreme weather events, limited access to land, and livelihood challenges.

Socio-Economic Vulnerabilities:
Displacement is exacerbated by poverty, with 60% of the population living in multidimensional poverty. Vulnerable groups, such as female-headed households, face heightened risks of displacement.



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2. Geospatial Information Management in Practice

Data Integration and Quality:
Leveraging high-quality, timely, and disaggregated geospatial data (Available CODs and FODs).
Integration of satellite imagery, field data, and community reporting to map displacement and return trends (e.g. Area-Based Approach as a precursor to solutions pathway).

Multi-Stakeholder Collaboration:
Coordinating across government agencies, NGOs, and international organizations to enhance situational awareness and policy planning.
Building partnerships to foster a unified approach in addressing displacement challenges.
(IOM and UN-Habitat, with Pemba's Municipal Council and Swiss support, are driving a project to bolster urban resilience and enable gender-sensitive, participatory integration of internally displaced persons through coordinated planning, training, and infrastructure improvements.)

Technological Innovation:
Utilizing emerging technologies such as cloud-based GIS platforms and Geofencing, incorporating them with mobile data collection tools.
Case study: Emergency Tracking Tool online PBI dashboard

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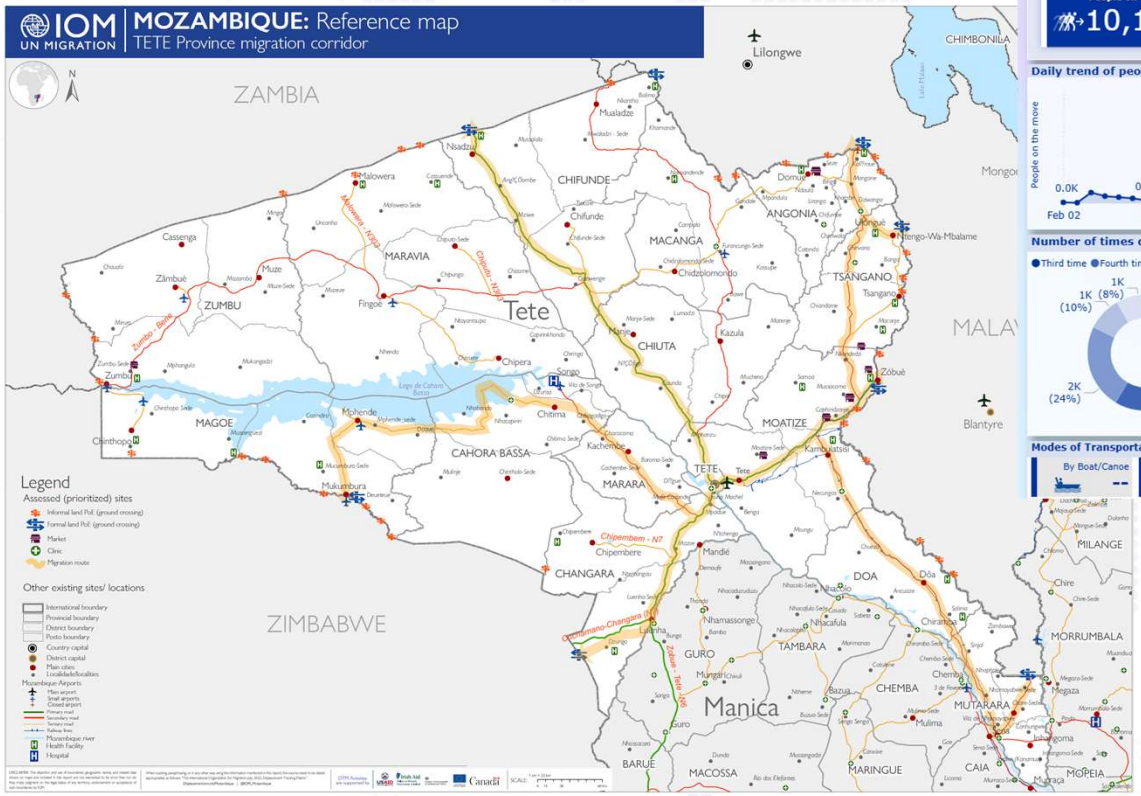
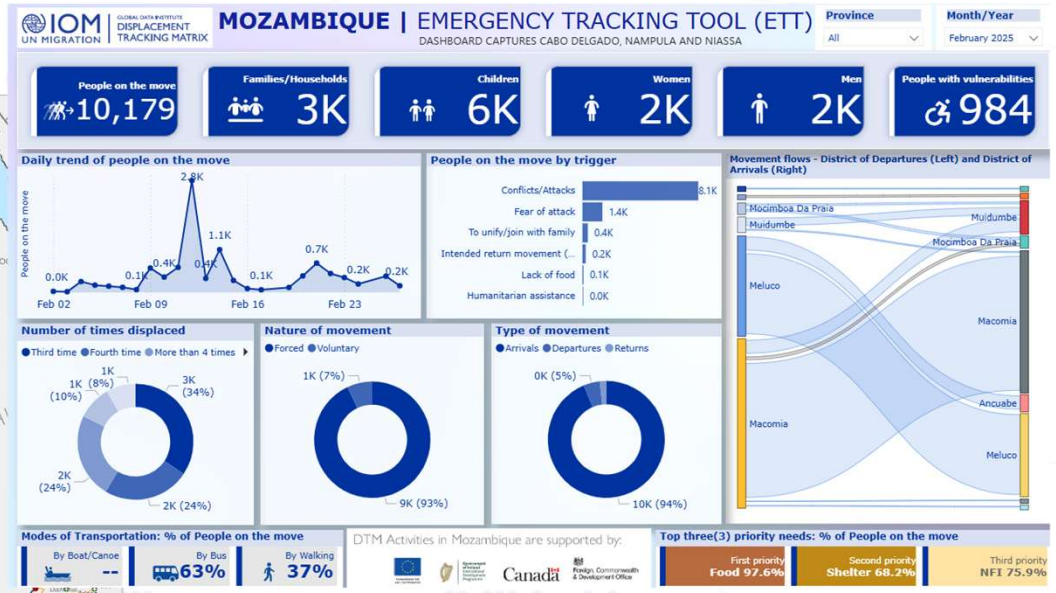
Geospatial Information Management in Practice

Tete Province Migration Corridor: Integrating Flow Monitoring registry, Population Mobility Mapping, with Community Crowd-Sourcing for Evidence-Based Policy Formulation





This dashboard from **IOM's Emergency Tracking Tool (ETT)** for Mozambique (covering Cabo Delgado, Nampula, and Niassa in February 2023) provides a snapshot of surge population displacement in the abrupt events of conflicts/attacks

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3. Importance & Use of Enumeration Areas (EAs) and Geofencing in Sampling

Statistical Representativeness, MSNA – Multi-Sectoral Needs Assessment:

Achieving a robust representativeness and high-level data quality, (especially for MSNA) could require many layers of technical and political nitty-gritties. Ranging from technical consultations with government and partners and carefully overlaying sampling methodology with GIS based EA definitions (using Theissen polygons, geo-fencing and incorporating these with the data collection tools):

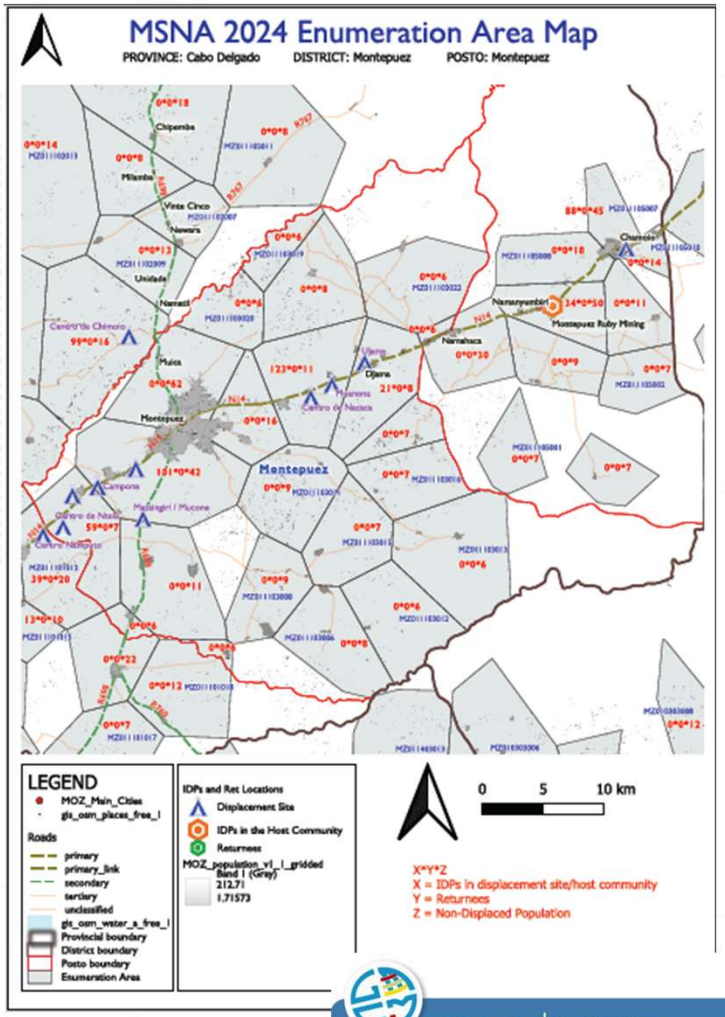
Ensuring Accuracy: EAs provide a structured approach that improves sample representativeness, reducing bias in data collection.

Efficient Sampling Frame (Systematic Sampling): EAs allow for a more efficient and systematic selection of samples, ensuring balanced coverage across different areas.

Standardization & Coverage (Geographic Consistency): Following administrative boundaries aids in comparing data over time and across regions.

Inclusivity: EAs help capture data from displaced populations, informal settlements, hard-to-reach groups, returnees and non-displaced population.

Operational Efficiency (Cost & Time Reduction): By guiding enumerators to specific zones, EAs optimize fieldwork and minimize unnecessary expenditure.



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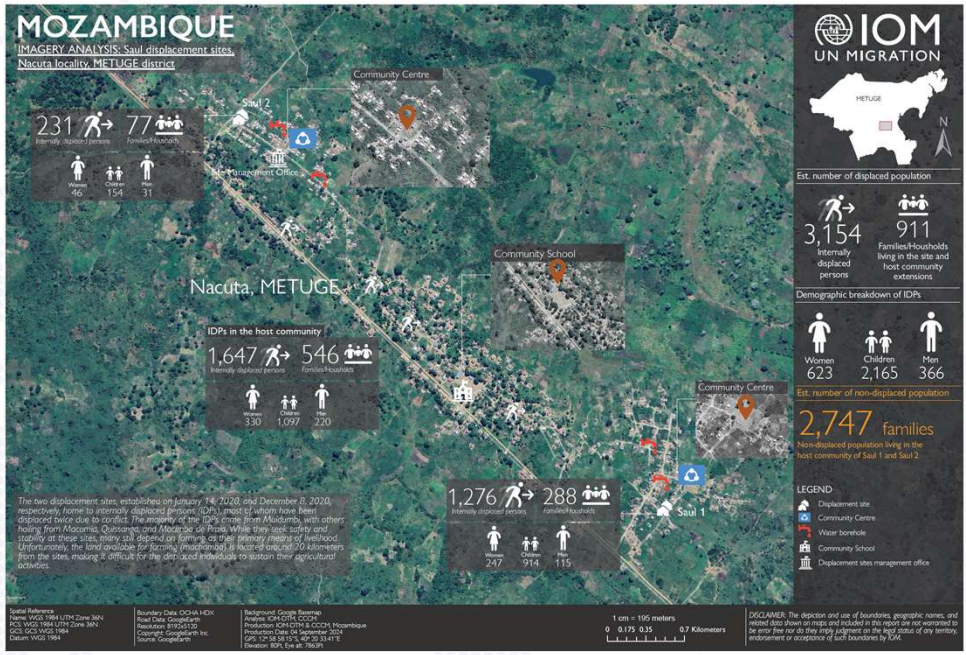
Importance & Use of Enumeration Areas (EAs) in Sampling

Facilitating Longitudinal Analysis (Trend Monitoring): Repeated data collection from the same EAs enables tracking displacement trends, returns, and progress toward durable solutions.

Supporting GIS and Spatial Analysis (Mapping & Analysis): Linking EAs with GIS platforms allows for detailed mapping of displacement patterns, movement trends, and settlement changes.

Alignment with National & International Data (Data Compatibility): Using official EAs ensures that the data aligns with national census information and global frameworks (e.g., IRIS, IASC Criteria for Durable Solutions, DSID).

Enhancing Policy & Program Targeting (Granular Insights): EA-based data supports more precise, community-specific interventions and informs effective humanitarian and development planning. (e.g. Area-Based Approach as a precursor to solutions pathway).



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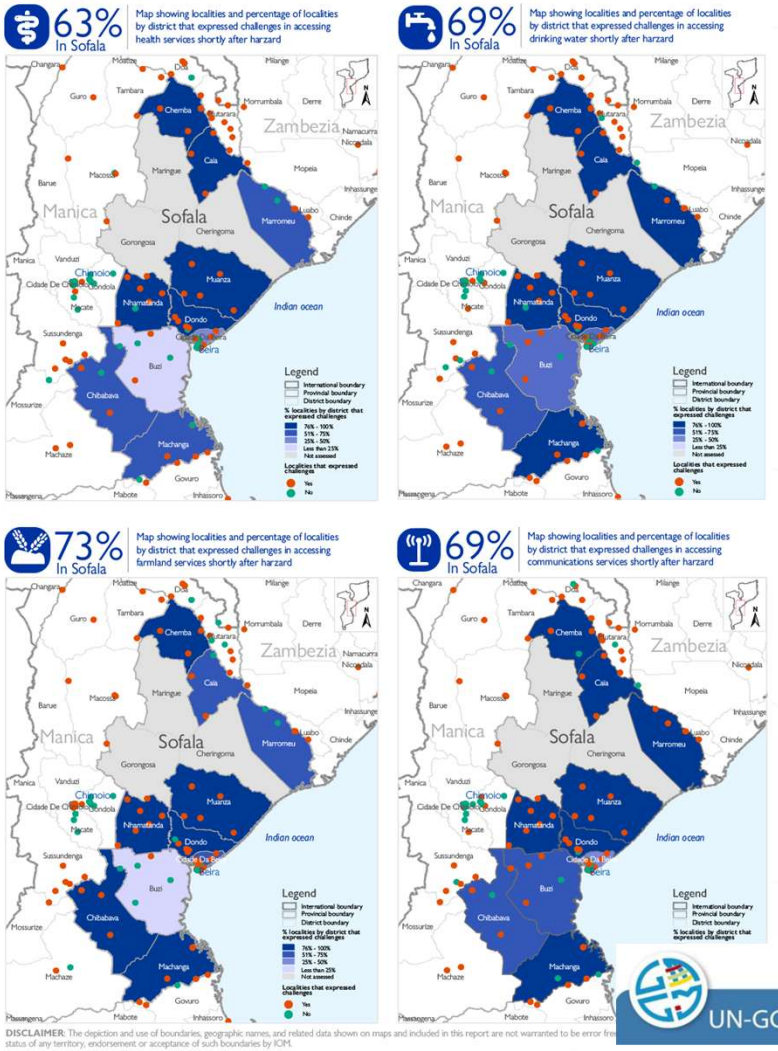
4. Integration: From Data Collection to Decision-Making

Bridging Macro and Micro Perspectives:

Macro-Level: Leverage on institutional frameworks to set strategic priorities and mobilize national capacities.
Micro-Level: Use EA-based data to drill down into local contexts, ensuring that interventions are tailored to specific needs.

GIS as a Unifying Tool:
Demonstrate how GIS platforms can integrate EA data with broader geospatial datasets to visualize trends, identify gaps, and support real-time decision-making. (Displacement Hazard Mapping – Complementing Mozambique's EWS)



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5. Next Steps: Strategic Pathways

Integrating these approaches into a national-level action plan that aligns with the GoM national policies and supports Mozambique's unique challenges.

1. Durable Solutions Workstreams (Data WS 1) - Política e Estratégia de Gestão de Deslocados Internos (PEGDI) [Policy and Strategy for the Management of Internally Displaced Persons (PEGDI)]
2. Area-based Approach
3. Capacity Building

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Next Steps: Capacity Building

Supporting Pemba Bairros in Geospatial Mapping of Quarteirões for Urban IDP Mapping

Background & Objective:
Between 2021 and 2022, the Displacement Tracking Matrix collaborated with Bairro-community focal points from municipal and district administrations in Pemba. The goal was to improve the mapping of neighbourhood subdivisions (Quarteirões) to enhance urban IDP tracking and response.

Key Activities:
Community-Driven Mapping: Worked with local focal points to refine the spatial definition of bairros and quarteirões (sub-neighbourhoods).
Geospatial Tools & Methods: Introduced and strengthened the use of GIS-based mapping to capture IDP presence within urban settings.
Capacity Building: Trained municipal and district administration focal points on mapping processes, tools, and how to integrate geospatial data into urban IDP monitoring.

Impact & Significance:
More Accurate IDP Data: Enhanced precision in identifying where displaced populations are located within urban areas.
Strengthened Local Capacity: Ensured sustainability by equipping local stakeholders with geospatial mapping skills.

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Muito Obrigado!