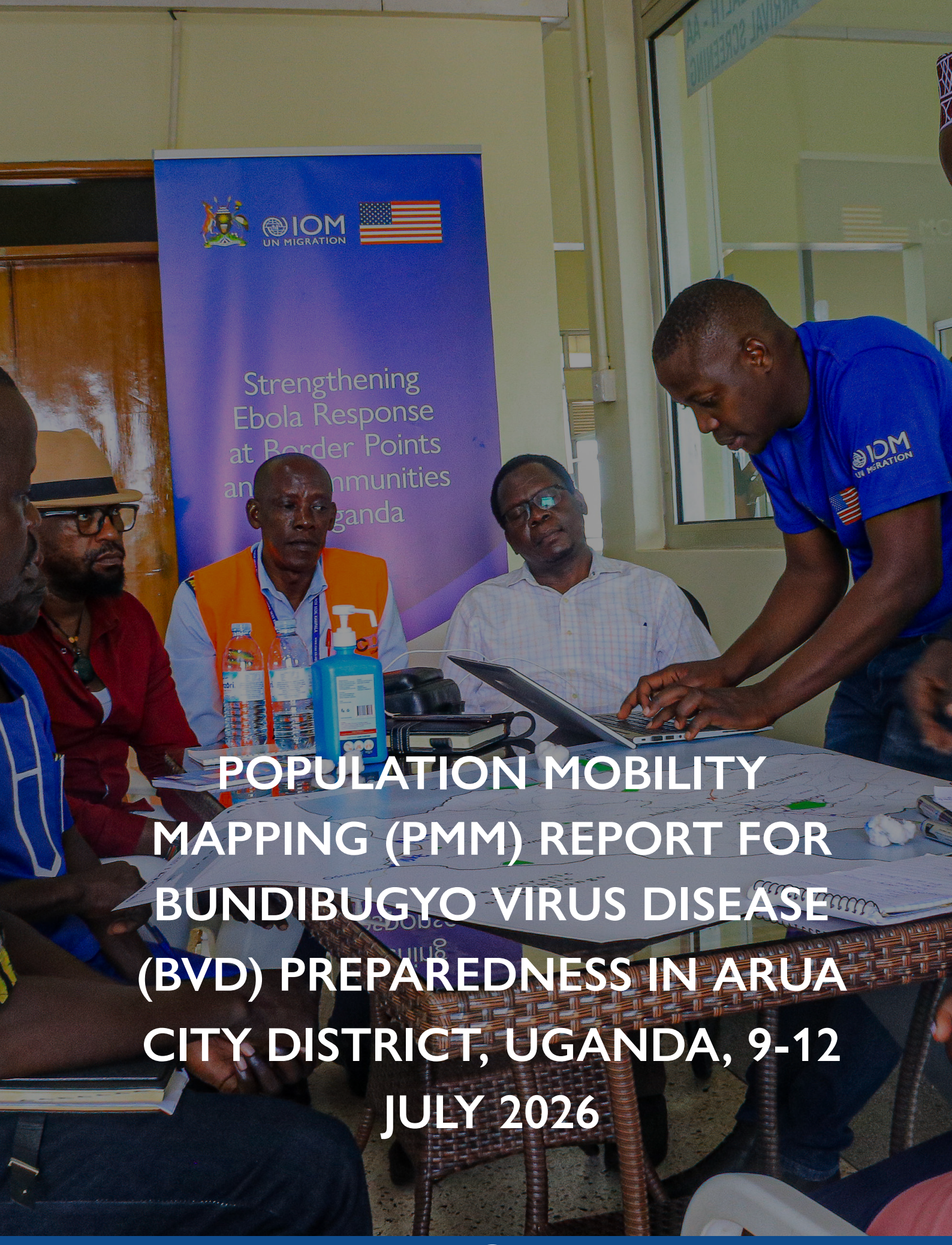

POPULATION MOBILITY MAPPING (PMM) REPORT FOR BUNDIBUGYO VIRUS DISEASE (BVD) PREPAREDNESS IN ARUA CITY DISTRICT, UGANDA, 9-12 JULY 2026

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CONTENTS

LIST OF ACRONYMS

BVD	Bundibugyo Virus Disease
CFR	Case Fatality Rate
DTM	Displacement Tracking Matrix
DRC	Democratic Republic of Congo
EVD	Ebola Virus Disease
HBMM	Health Border and Mobility Management Framework
IHR	International Health Regulations
IOM	International Organization for Migration
IPC	Infection Prevention and Control
MOH	Ministry of Health
PME	Participatory Mapping Exercise
PMM	Population Mobility Mapping
PoE	Point of Entry
RCCE	Risk Communication and Community Engagement
SOP	Standard Operating Procedure
WASH	Water, sanitation and hygiene

1. Introduction and Context

As part of preparedness efforts for the ongoing Bundibugyo Virus Disease (BVD) outbreak affecting the Democratic Republic of the Congo (DRC) and Uganda, the International Organization for Migration (IOM), in collaboration with the Ugandan Ministry of Health (MoH) and local authorities, conducted a Population Mobility Mapping (PMM) exercise in Arua City between 9 and 12 July 2026. The exercise brought together key stakeholders including community representatives, health workers, transport operators, border officials, local leaders, religious leaders, and traders, among others, to map population movements, identify priority mobility corridors, congregation points, and formal and informal points of entry that may facilitate cross border transmission of BVD.

As of mid-July 2026, the DRC had reported more than 2,100 confirmed BVD cases and over 800 deaths, representing a crude case fatality rate (CFR) of approximately 39% while Uganda had reported 20 confirmed cases and 2 deaths (CFR: 10%), with no new cases reported since 21 June 2026. The outbreak has been concentrated in eastern DRC, particularly Ituri and North Kivu provinces, with cross border transmission linked to Uganda. Given Arua's strategic location along major trade and migration routes connecting Uganda, DRC, South Sudan and the rest of the region, the PMM exercise was undertaken to strengthen evidence based public health preparedness, support risk informed planning and enhance coordination among different government and partner response actors.

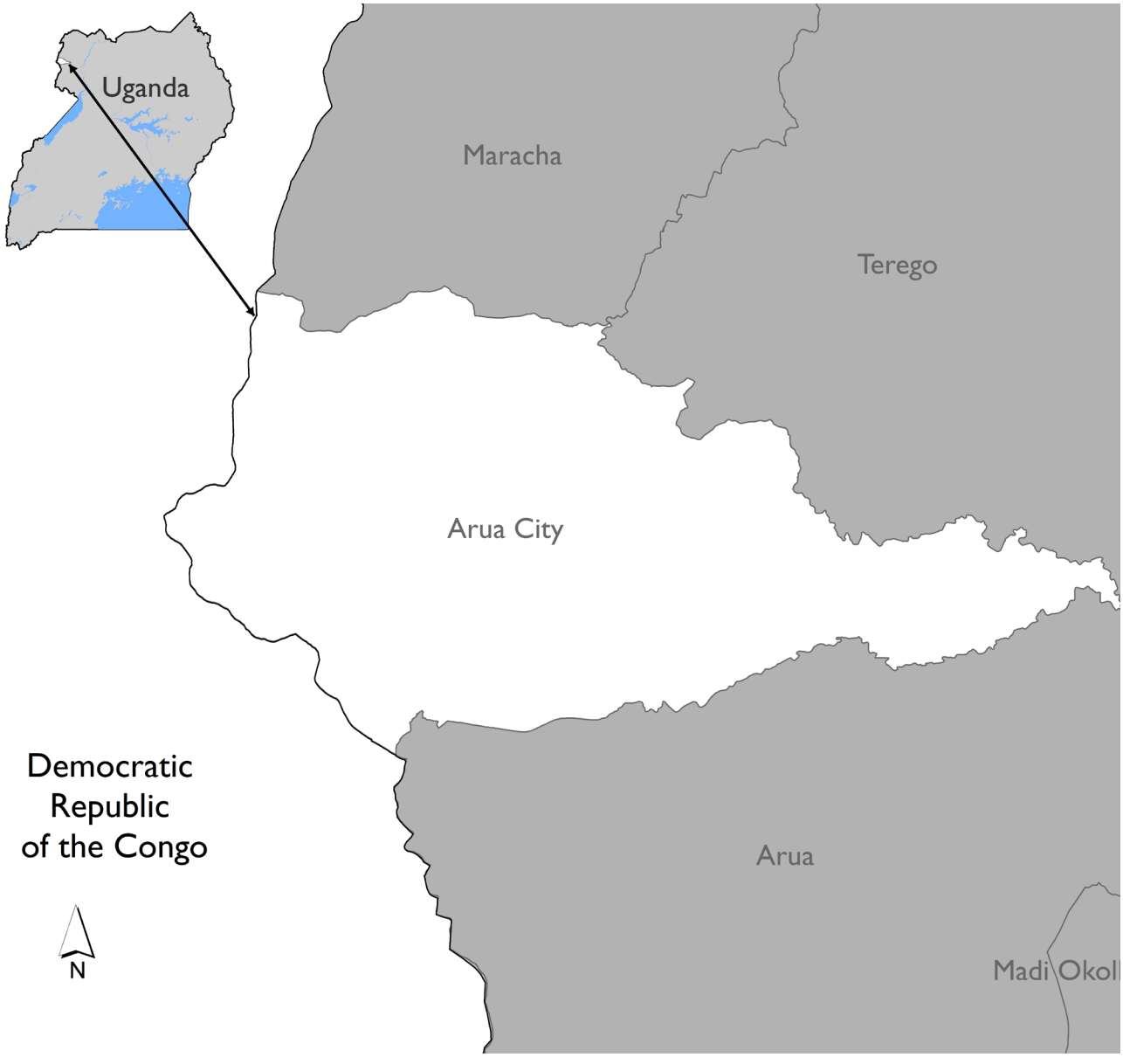
Participants identify and validate key mobility routes and priority locations during the Population Mobility Mapping (PMM) exercise in Arua City, Uganda © IOM 2026

2. Objectives

The PMM exercise had the following specific objectives:

1. To provide information on the patterns, dynamics and characteristics of population mobility between DRC and Arua City.
2. To identify points of entry and spaces of vulnerability where travellers or mobile populations gather and interact with each other or with local communities.
3. To prioritize sites with limited capacities to prepare for and respond to BVD, alongside informing resource allocation aimed at preventing, detecting and limiting the BVD spread.
4. To support the design and implementation of public health interventions for preparedness and response to public health events at priority locations in a geographical area of interest.

MAP 1: ARUA CITY DISTRICT



3. Methodology

The PMM methodology is a critical component of IOM's Health Border and Mobility Management (HBMM) framework and was developed in coordination with IOM's Displacement Tracking Matrix (DTM) and key health partners. PMM generates information about cross-border movements among mobile populations and supports the development of forecasting capacities in target locations to inform public health interventions that prevent, detect and respond to public health emergencies and international health threats along the mobility continuum.

PMM can consist of up to three phases, whereby phase I involves a participatory mapping exercise (PME) with key informants to identify mobility patterns, spaces of vulnerability and congregation points. Phase II involves site observation activities to key PoEs and congregation points identified in Phase I to generate more granular information, and phase III comprises of flow monitoring surveys to better understand the volume, drivers and intention of people on the move at identified PoEs. Depending on context, needs and available resources, a given PMM exercise may draw on one, two or all three phases, since it is not always feasible to implement every component in full.

In Arua City, a PME (phase I) was conducted on 9 July 2026 at Arua Airport with 21 stakeholders (17 males and 4 females) that were selected based on their knowledge of population mobility in the city, connectivity to DRC, community dynamics and existing public health risks. Participants represented a broad range of stakeholder groups including:

- Religious leaders, boda-boda operators, business community members, health workers, transport and logistics operators, local leaders, traditional healers, representatives from Port Health, the Internal Security Organization (ISO), the Uganda Police Force, Immigration, and Customs authorities.

Participants were actively engaged throughout the one-day PME session, and selected participants and additional key informants supported the subsequent site evaluations (phase II of PMM) conducted from 10 to 11 July 2026. Their collective expertise provided valuable insights into population movements, cross border interactions, trade routes and congregation points, informing preparedness and response planning in response to the current BVD outbreak.

A complimentary PMM exercise was conducted in Arua District, from 6-8 July.

Limitations

PMM is a public health intervention conducted in specific locations - and at a particular moment in order to understand mobility trends and dynamics in those areas. It does not aim to provide a full description of all movements in the country or through a specific site. The findings represent the available data, which is also impacted by limited digitalization and surveillance of all possible entry points.

Additionally, these PMM exercises were conducted while the Uganda-DRC border remained closed in response to the BVD outbreak. As a result, the mobility patterns captured, including formal PoE volumes and the apparent scale of informal crossing activity, reflect this closure period specifically and may not represent typical, non-outbreak baseline mobility trends in the area.

4. Findings

Findings from phases I and II of the PMM showed that mobility in Arua City is primarily driven by:

- **Formal and informal cross-border trade** which facilitates frequent movement of traders, transporters, truck drivers, and local communities between Uganda and DRC. Movement occurs through various means of transport, including buses, private vehicles, motorcycles (boda-bodas), and on foot.

The exercise further revealed that transportation by air travel through Arua City Airport, plays a vital role in connecting populations within Uganda via Entebbe and across the region, including the DRC, South Sudan and Kenya.

- **Social and financial services** were identified as significant drivers, with people regularly travelling to access banking services, hotels, restaurants, entertainment venues, and places of worship such as churches and mosques.

- **Healthcare seeking** as the availability and perceived better quality of health services in Arua City influence cross-border movement, with some health facilities in Anyara, Kubo, Ombach and Orugb sub counties in Arua City (which are on the border with DRC) reporting that some of their patients come from the DRC.

- **Education related movements,** contribute significantly to daily population flows, with several schools located near the border that enroll a large number of students, including children who cross from the DRC into Uganda each day to attend classes, with some institutions receiving up to 1,200 students daily.

The high volume of movement for trade, healthcare, and education creates high-risk pathways for disease transmission and underscores the need for strengthened preparedness measures.

Mobility Routes and Patterns

The exercise identified seven key high-risk mobility routes linking Arua City with the DRC, South Sudan, and other parts of Uganda. These routes include road, air, and informal border pathways and should be considered as priority corridors for BVD-related preparedness interventions.

KEY MOBILITY CORRIDORS AND CONNECTIVITY ARUA CITY DISTRICT

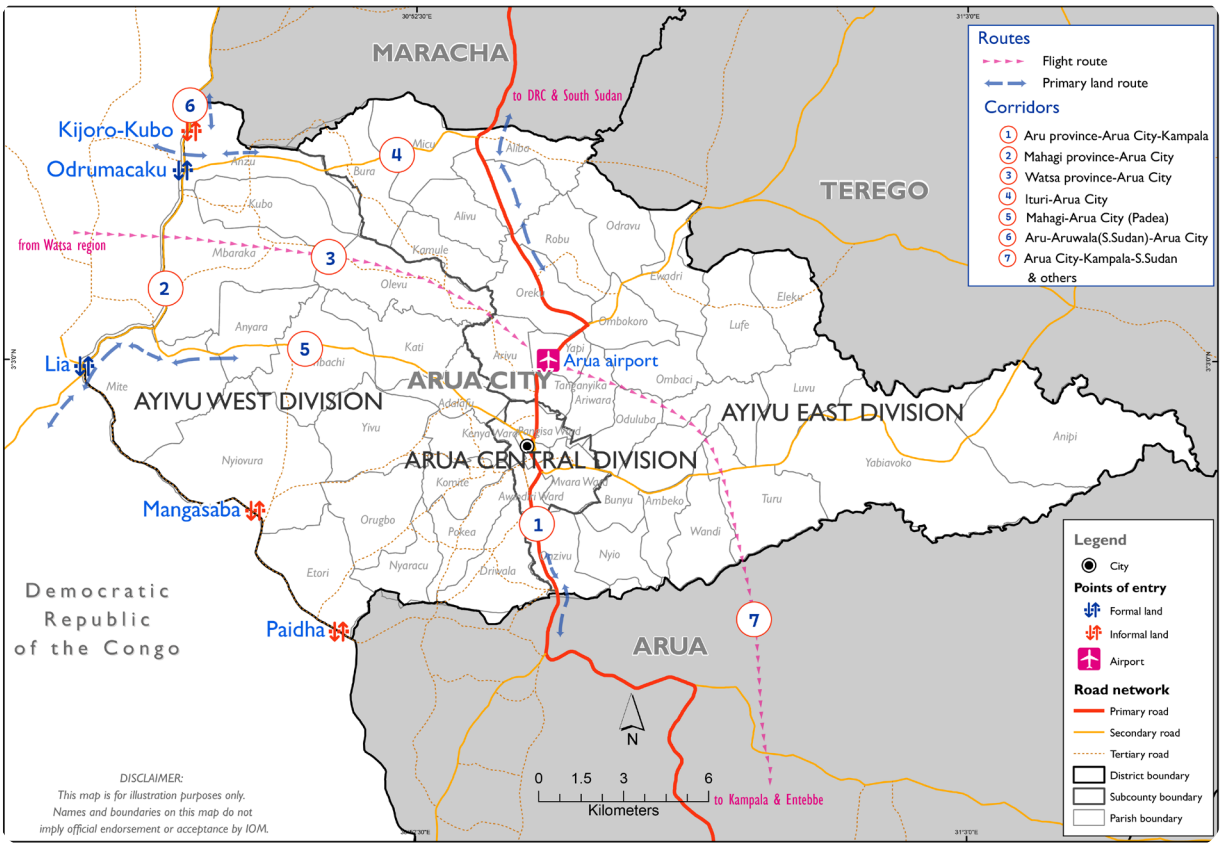


Table 1. Population Mobility Key Routes

Primary Mobility Axes		Connected PoEs	Key Transit Locations	Mode of Transport
Axis 1: Connected to Aru Province				
Route (Road)	Faradje (DRC) – Aru (DRC) - Arua city (Uganda)	Odramachaku, Lia, Mangasaku	Arua, Packwach, Nebbi, Nakasongola to Kampala	Personal cars, Trucks, Cargo, Buses
Axis 2: Ituri – Connected to Mahagi, Djugu region				
Route (Road)	Ituri (DRC) – Djugu (DRC) – Mahagi (DRC) – Goli (Uganda) – Nebbi (Uganda) - Arua city (Uganda)	Odramachaku, Lia, Mangasaku	Arua, Packwach, nebbi, Nakasongola to Kampala	Trucks, Cargo, Cars
Axis 3: Connected to Watsa region				
Route (Air)	Watsa (DRC), Duruba (DRC), Aru (DRC), Arua city (Uganda)	Entebbe	Mwanza, Entebbe Airport	Aeroplane
Axis 4: Connected to Ituri region				
Route (Road)	Ituri (DRC), Djugu (DRC), Mahagi (DRC), Vurra (Uganda), Arua city (Uganda)	Odramachaku, Lia	Arua, Masindi, Kagadi	Truck and Cargo, Car, Motorcycle, Bus
Axis 5: Connected to Mahagi region				
Route (Road)	Mahagi (DRC), Padea (Uganda), Zombo (Uganda), Arua city (Uganda)	Odramachaku, Lia	Arua city	Cargo Truck, Bus, Private cars
Axis 6: Connected to Aru Provice				
Route (Road)	Aru (DRC), Aruwala (South Sudan), Odramachaku (Uganda)	Odramachaku	Arua, Kole, Mbale	Truck, Buses, Cars, Motorcycles
Axis 7: Connected to Kampala, South Sudan, DRC, and other countries				
Route (Air)	Arua Airport (Uganda)	Arua Airport	Arua City and Arua Airport	Aeroplane

Points of Entry

The PMM exercise identified six priority points of entry (PoE) that facilitate population movement to high-risk areas in the DRC, including three formal PoEs, Odramacaku, Lia, and Arua Airport, and three informal crossing points, Kijoro Kubo, Mangasaba and Paidha.

Despite restrictions on cross-border movement linked to the ongoing outbreak, these locations continue to experience substantial daily traffic. For example, it was found that Odramacaku PoE currently records between 500 and 600 crossings per day (650 to 750 before the border closure), while Lia PoE receives approximately 250 to 300 (350 to 400 before the border closure) daily crossings. Arua City Airport, which provides connectivity to destinations within Uganda and across the region, currently handles an average of 18 to 30 travellers per day (following the suspension of some international routes which previously resulted in 80 to 120 per day).

Significant mobility continues through informal routes such as Kijoro Kubo which receives an estimated 60 to 100 crossings daily, alongside Mangasaba with 300 to 400 crossings daily, and Paidha with 100 to 200 crossings daily. These routes are frequently used by traders, students, transport operators, and local communities travelling between the DRC and Uganda. Movement occurs primarily by road and on foot, facilitating cross border trade, access to healthcare services, education, tourism, and other socioeconomic activities. Several crossing points experience increased movement during market days, particularly at Odramacaku and Lia, (Monday and Friday) where regular markets attract populations from surrounding communities and across the border.

The proximity of these PoEs to health facilities presents important opportunities for surveillance, early detection, and response. Odramacaku and Kijoro Kubo are served by Ayivuni Health Center III, located within 1.5 km and 0.5 km respectively, while Lia PoE is linked to Adumi Health Center IV, located approximately 4 km away. Mangasaba and Paidha are served by Pajuru Health Center III, situated approximately 5 km from both crossings, while Arua City Airport is linked to Oli Health Center IV, located 1.5 km away. Given the continued movement of populations through both formal and informal crossings, strengthening disease surveillance, screening, infection prevention and control measures, and referral systems at health facilities serving these mobility corridors remains critical to enhancing preparedness and response capacities for potential BVD transmission.

Participants identify and map key mobility routes and locations during the Participatory Mapping Exercise (PME) conducted as part of the PMM exercise in Arua City, Uganda. © IOM 2026

A participant presents and explains priority locations identified during the Participatory Mapping Exercise (PME) in Arua City, Uganda.© IOM 2026

PRIORITIZED BORDER CROSSING POINTS IN ARUA DISTRICT

Table 2. Priority Points of Entry

Name	Type	Daily Volume	Nearest Health Facility	Distance (PoE to health facility)	Locality
Odramacaku	Formal	500-600 currently (numbers increase to 650 – 750 with no restriction measures)	Ayivuni Health Center	1.5km	Kubo
Lia		250-300 currently (numbers increase to 350-400 with no restriction measures)	Adumi Health Center	4km	Ombachi
Arua City Airport	Formal	18-30 currently (numbers increase to 80-120 with no restriction measures)	Oli Health Center	1.5km	Tanganyika
Kijoro-Kubo	Informal	60-100 daily	Ayivuni Health Center	0.5km	Kubo
Mangasaba	Informal	300-400 daily	Pajuru Health Center	5km	Orugbo
Paidha	Informal	100-200 daily	Pajuru Health Center	5km	Etori

Total identified were 6. All identified PoEs were prioritized due to their connection to congregation points.

A Ministry of Health official provides an overview of the current health situation and delivers opening remarks to participants during the Population Mobility Mapping (PMM) exercise in Arua City, Uganda © IOM 2026

Congregation or Transit Points

PMM exercise identified 23 key 'at risk' congregation points in Arua City, including markets, schools, places of worship, transport hubs, financial institutions, hotels, and entertainment venues that attract large numbers of people from Uganda and neighbouring areas of the Democratic Republic of the Congo (DRC). 15 of these locations were prioritized due to their high daily population volumes, cross border connectivity, and potential role in facilitating disease transmission.

Markets represented the largest congregation points, with the Arua Main Market receiving approximately 6,000 visitors per day, while Odramacako, Lobida, and Canage Community markets each attract around 3,000 people daily. Lia Market receives approximately 1,000 visitors per day, with volumes increasing significantly on market days (Mondays and Fridays). These markets are important centres for cross border trade and business, attracting traders and customers from Arua City, surrounding districts, and DRC communities including Aru and Ariwara. Given these high daily volumes and cross-border connectivity, markets present a priority setting for BVD risk mitigation.

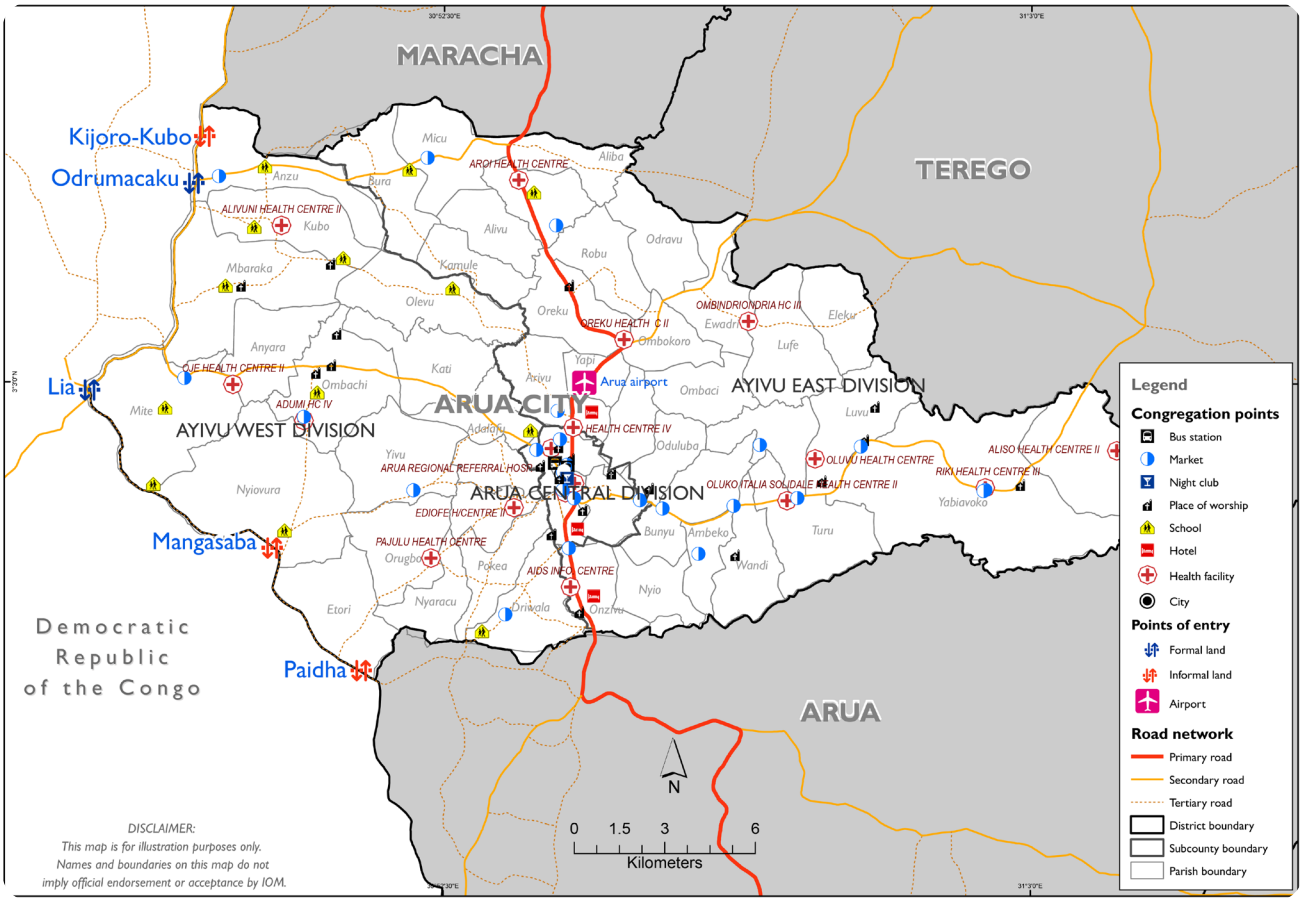
Schools were also identified as major congregation points that facilitate frequent interaction between Ugandan and DRC populations. Kijoro Odru Primary School receives approximately 1,200 learners daily, Arpezu Primary School receives 1,100 learners, while Ekuu Primary School and Abiria Primary School each receive approximately 1,000 learners per day. Awara Secondary School receives around 600 students daily. Several schools (Arpezu, Ekuu, Ijoro, Abiria, and Awara, among others) reported enrollment of learners from the DRC, including close to 100 learners from Aru attending Arpezu Primary School.

Religious institutions attract substantial daily gatherings, with Riyadh Mosque receiving approximately 1,200 worshippers per day, Christ the King Church, St Philip Church, and Muktaru Mosque each attracting around 1,000 people daily, and Nyio Church receiving approximately 500 worshipers. Attendance was reported to increase considerably during religious celebrations and festive periods.

Additional congregation points include transport terminals, financial service centres, hotels, and entertainment venues. Nile Star, Nile Coach, Terminal YY, and Baby Coaches terminals facilitate movement between Arua City, neighbouring districts, Kampala, and destinations in the DRC. Centenary Banking Hall receives approximately 100 visitors daily and serves clients from both Uganda and the DRC. Entertainment venues such as Triplex Night Club and Letsuba Hotel continue to attract local and cross-border visitors, while Capital One Night Club, which previously received approximately 600 visitors daily, was reported to be closed at the time of the assessment due to the ongoing BVD preparedness measures as it attracts large numbers of people over the weekend.

Collectively, these 23 congregation points, spanning markets, schools, places of worship, transport hubs, financial institutions, hotels, and entertainment venues, facilitate extensive daily interaction among mobile populations across Arua City and neighbouring DRC communities. Given their high daily foot traffic and cross-border connectivity, the 15 prioritized sites in particular represent priority locations for targeted disease surveillance, risk communication and community engagement (RCCE) activities tailored to each setting, and broader Ebola preparedness interventions including infection, prevention and control (IPC) and hygiene stations and strengthened referral pathways. Sustained monitoring and engagement across these sites could support early detection of symptomatic cases and reduce the risk of undetected transmission along this high-volume mobility corridor.

MAP OF PRIORITIZED CONGREGATION POINTS IN ARUA CITY DISTRICT



An isolation tent near Vurra PoE which connects to the city where some suspected cases were identified © IOM 2026

Table 3. Prioritized Congregation Points

Name	Type	Type Daily Flow	Observations
Odramacako	Market	3000/day	Main border currently closed, volumes reduced
Lia	Market	1000/day	The number is higher on Market days[M
Arua main	Market	6000/day	The number is higher on Market days
Lobida	Market	3000/day	The number is higher on Market days
Canage community	Market	3000/day	The number is higher on Market days
Christ the King	Church	1000/day	Numbers higher during festive seasons and other celebration days like Easter
St Philip	Church	1000/day	Numbers higher during festive seasons and other celebration days like Easter
Riyadh	Mosque	1200/day	High volumes during prayer times
Muktaru	Mosque	1000/day	High volumes during prayer times
Arpezu PS	School	1100/day	Close to 100 learners from Aru - DRC
Ekuu PS	School	1000/day	Presence of daily learners from DRC
Kijoro odru PS	School	1200/day	Presence of daily learners from DRC
Nile Star terminal	Bus stop	100/day	Many travellers from DRC prefer this bus company
Capital one	Night club	600/day	Currently closed due to preventive measures
Triplex	Night club	400/day	Operating 24/7 with higher attendance on weekends
Letsuba	Hotel	300/day	Popular local hotel with higher flow during the weekend (Friday to Sunday) and during holiday seasons (November – January)

Total identified: 23; 15 prioritized

An IOM staff member provides participants with an introduction to the PMM methodology and process ahead of the participatory mapping exercise in Arua City, Uganda © IOM 2026

5. Public Health Recommendations

Building on the findings of the PMM exercise in Arua City, the following table outlines priority interventions to strengthen BVD preparedness and response along the high-risk mobility corridors, points of entry, and congregation points identified through the mapping and flow monitoring assessments. These recommendations span five key areas, surveillance and early detection, IPC, RCCE, cross-border coordination, and broader preparedness and response coordination, targeting the specific locations, informal crossings, health facilities, markets, schools, and other congregation points where mobility-linked transmission risk is highest.

Table 4. Public Health Recommendations

Disease Surveillance and Early Detection

Strengthen surveillance at priority points of entry and informal crossings

- Strengthen event-based surveillance, screening, alert reporting, and rapid verification at Odrumacaku, Lia, Arua City Airport, Kijoro Kubo, Mangasaba, and Paidha, which continue to facilitate movement between Arua City and high-risk areas in the DRC.
- Prioritize Odrumacaku, which currently records 500 to 600 crossings daily; Lia with 250 to 300 daily; Mangasaba with 300 to 400 daily; Paidha with 100 to 200 daily; and Kijoro Kubo with 60 to 100 daily. As several of these are informal crossings outside formal PoE screening infrastructure, they warrant particular attention given their potential to facilitate undetected movement between Arua City and high-risk DRC border areas.

Deploy mobile surveillance along major mobility corridors

- Establish targeted disease surveillance along the seven high risk mobility routes linking Arua City with Aru, Ariwara, Ituri, Mahagi, Djugu, South Sudan, Kampala, Entebbe, and other locations in Uganda and the region.
- Focus disease surveillance on road, air, and informal border pathways used by traders, transport operators, students, health seekers, and local communities moving by foot, motorcycles, buses, cargo trucks, private vehicles, and air transport.
- Given the diversity of transport modes and user groups along these corridors, mobile surveillance teams should be flexible enough to adapt screening and alert reporting to each pathway's specific traffic patterns and peak movement times.

Expand community-based surveillance alert detection in high mobility communities

- Train and support village health teams, community volunteers, market leaders, boda boda riders, transport operators, school focal persons, religious leaders, and local authorities to identify and report suspected BVD alerts, unusual deaths, and clusters of illness.
- Prioritize communities located around informal border crossings, including Odramacaku, Lia, Mangasaba, Paidha, and Kijoro Kubo; high traffic markets such as Arua Main Market, Odramacako, Lobida, Canage Community Market, and Lia Market; schools with confirmed enrolment of learners from the DRC, including Arpezu Primary School; key transport hubs such as Arua City Airport; and places of worship that support regular interaction between populations from Uganda and the DRC.

Infection Prevention and Control (IPC)

Strengthen IPC readiness at health facilities linked to Points of Entry

- Equip Ayivuni Health Center, Adumi Health Center, Pajuru Health Center, and Oli Health Center with functional triage points, screening tools, hand hygiene infrastructure, personal protective equipment, waste management capacity, temporary isolation space, and clear referral pathways.
- Prioritize facilities located near high mobility points, including Ayivuni Health Center, 1.5 km from Odrumacaku and 0.5 km from Kijoro Kubo, Adumi Health Center, 4 km from Lia, Pajuru Health Center, 5 km from Mangasaba and Paidha, and Oli Health Center, 1.5 km from Arua City Airport.

Improve IPC measures at high volume congregation points

- Install, maintain, and monitor hand hygiene facilities, screening points, risk communication materials, and referral information at priority markets (Arua Main Market, Odramacako, Lobida, and Canage Community markets), schools (Kijoro Odru Primary School, Arpezu Primary School, Ekuu Primary School, Abiria Primary School, and Awara Secondary School), and Arua City Airport, alongside religious institutions, hotels, and entertainment venues with high daily flow.
- Strengthen preparedness in cross-border-linked schools, particularly Arpezu Primary School given its confirmed DRC learner enrolment, by providing hand hygiene stations, age-appropriate BVD awareness materials, reporting procedures, and referral protocols for suspected illness among learners and staff.

Risk Communication and Community Engagement (RCCE)

Develop mobility informed RCCE interventions tailored to key population groups

- Tailor RCCE approaches by group and channel:
  - For market vendors and traders, deliver hygiene and symptom-awareness messaging through market announcements and vendor association meetings, alongside visible signage at stalls.
  - For students and teachers, integrate age-appropriate health education and handwashing practice into school assemblies and health clubs, with clear guidance for teachers on reporting suspected illness among learners.
  - For transport workers, truck drivers, and boda boda riders, use transport association briefings and point-of-departure signage to convey passenger screening cues and referral information.
  - For health service users, reinforce messaging at waiting areas on early care-seeking and home-based warning signs.
  - For worshippers, deliver messaging through sermons and faith leader networks,
  - For hotel operators and entertainment venue managers, provide guest and staff screening protocols alongside reporting procedures for suspected illness among guests.

- Engage religious leaders, market committees, school administrators, transport associations, banking service focal points, boda boda groups, and local leaders as trusted channels for BVD preparedness messaging.
- Use these actors to promote early care seeking, prompt alert reporting, safe movement practices, use of hand hygiene facilities, and accurate information sharing in communities connected to Aru, Ariwara, Ituri, Mahagi, and other DRC locations.

Cross-Border Coordination

Strengthen referral pathways between points of entry and nearby health facilities

- Develop disseminate, and routinely test referral protocols linking each priority point of entry to its nearest health facility (see table 2) and rapid response mechanism.
- Conduct routine cross-border coordination meetings to facilitate rapid sharing of alerts and public health intelligence.

Preparedness and Response Coordination

Use PMM findings to guide preparedness planning and resource allocation

- Use the PMM findings to prioritize preparedness investments, frontline workforce deployment, IPC supplies, RCCE materials, and surveillance resources in locations with the highest mobility volumes and cross border connectivity, as outlined above: Odrumacaku, Lia, Mangasaba, Paidha, Kijoro Kubo, and Arua City Airport, and their linked health facilities and congregation points.
- Undertake regular readiness assessments and simulation exercises at priority points of entry, the frontline health facilities, schools, markets, transport terminals, and other high risk congregation points.
- Use these exercises to test alert detection, triage, IPC procedures, referral pathways, coordination mechanisms, and to strengthen operational readiness for potential BVD importation and transmission in Arua City.

6. Conclusion

This PMM exercise confirmed that Arua City remains a major cross border mobility hub linking Uganda with the DRC, South Sudan, and other regional destinations through seven priority mobility routes, six high risk points of entry, and 23 key congregation points. Population movement is primarily driven by trade, healthcare seeking, education, social services, and transportation, creating sustained interaction between communities from Uganda and the DRC.

These findings provide critical evidence to guide preparedness efforts by prioritizing strengthened disease surveillance, infection prevention and control, risk communication and community engagement, and cross border coordination at high-risk mobility corridors, points of entry, health facilities, markets, schools, transport hubs, and places of worship. Targeting interventions to these locations will help strengthen early detection, response capacity, and overall preparedness for potential Bundibugyo Virus Disease transmission in Arua City.

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This report does not represent the official opinion or the International Organization for Migration

IOM's PMM activities are supported through the generous contributions of:

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