

BACKGROUND

The International Organization for Migration (IOM), the UN Migration Agency, is working closely with the Congolese Ministry of Health (MoH) and the World Health Organization (WHO) to contain the 10th Ebola epidemic outbreak in the province of North Kivu, Democratic Republic of the Congo (DRC), in line with the International Health Regulations 2005. IOM is also working to address the needs of communities in the affected and non-affected health zones.

On 14 August 2018, IOM conducted a participatory **Population Mobility Mapping (PMM)** exercise in Beni, North Kivu Province. The objective of the mapping exercise was to analyze population mobility dynamics and patterns, and define priority sites for establishing Point of Entries (PoE), both in border and non-border locations, where active surveillance, prevention and risk communication can be focused. The Population Mobility Mapping (PMM) approach complements traditional public health risk assessments, enabling a more accurate prioritization of vulnerable locations and public health interventions.

METHODOLOGY

In corroboration with WHO, IOM has applied Population Mobility Mapping methodology for Ebola outbreak response during the 9th Ebola virus outbreak in Equator province DRC. The methodology was based on IOM's displacement tracking matrix (DTM) and past experiences in mapping population mobility specifically for epidemic preparedness and response in West Africa and in DRC.

Key informants were selected by the National Programme for Border Hygiene (PNHF) and IOM to participate in the one day mapping exercise, based on their understanding of the region and its local population movement dynamics. Participants represented the formal and informal, health and non-health sectors, including local authorities, community leaders, farmers, transportation providers, civil protection personnel, animal health officers and health workers.

The exercise began with an overview of the EVD, emphasising **modes of transmission** and **risks of spread** through travel and trade. Key informants were encouraged to relate the information shared with situations in their daily lives, and contribute their knowledge of their communities in the discussion. The objectives of the exercise were explained, as well as the importance of collective participation of all key informants, to produce critical information for the overall outbreak response.

Through facilitated discussion, participants identified **points of interest** where travellers might interact with other travellers, and/or stationary communities in **Beni town and 4 councils within Beni territory (Beni Bau, Ruwenzori, Watalinga and Bashu)**. This included markets, parking areas, public facilities, border crossings, and roads with high volumes of movement. After all points of interest were listed, participants prioritised points of interest based on risk factors including the estimated **volume** of travellers and traveller **connectivity** with EVD affected areas, large cities (eg. Bunia, Butembo and Goma) and cross border towns with Uganda. Participants marked key landmarks, all points of interest and mobility flows on maps and discussions were noted.

The exercise was concluded with a summary of the findings and feedback sought from participants. The exercise was followed by collection of GPS coordinates for points of interest and an accurate map summarising the results produced.



Participants conducting Population Mobility Mapping in Beni © IOM 2018

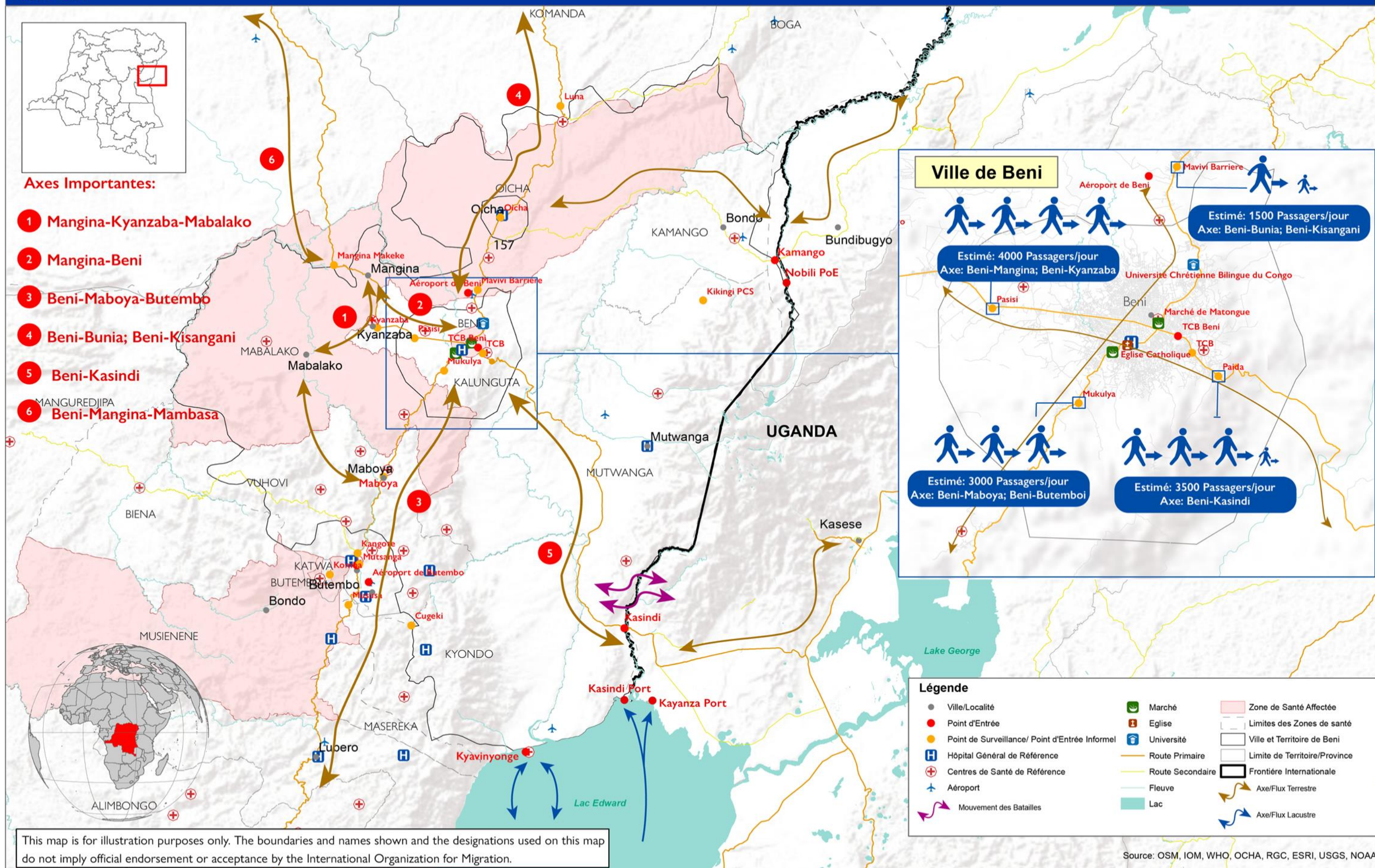
Areas of interest:

- **Beni (Oicha, Mbalako, Museienene)**
- **Surrounding border areas**

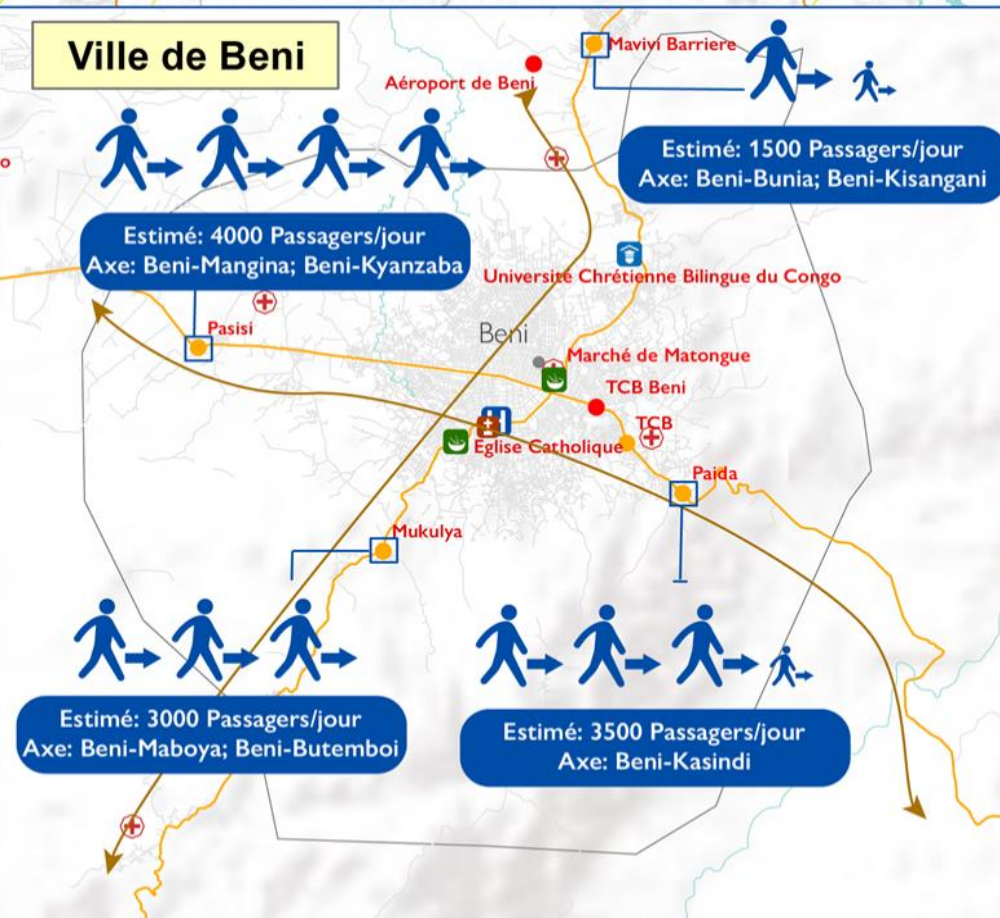


Axes Importantes:

- 1 Mangina-Kyanzaba-Mabalako
- 2 Mangina-Beni
- 3 Beni-Maboya-Butembo
- 4 Beni-Bunia; Beni-Kisangani
- 5 Beni-Kasindi
- 6 MANGUREDJIPA Beni-Mangina-Mambasa



Ville de Beni



Légende

- | | | |
|--|--------------------|---------------------------------|
| ● Ville/Localité | 🏠 Marché | 🏠 Zone de Santé Affectée |
| ● Point d'Entrée | 🏛 Eglise | --- Limites des Zones de santé |
| ● Point de Surveillance/ Point d'Entrée Informel | 🎓 Université | ▭ Ville et Territoire de Beni |
| 🏥 Hôpital Général de Référence | 🛣 Route Primaire | ▭ Limite de Territoire/Province |
| 🏥 Centres de Santé de Référence | 🛣 Route Secondaire | ▭ Frontière Internationale |
| ✈ Aéroport | 🌊 Fleuve | ➡ Axe/Flux Terrestre |
| 👤 Mouvement des Batailles | 🌊 Lac | ➡ Axe/Flux Lacustre |

This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

Source: OSM, IOM, WHO, OCHA, RGC, ESRI, USGS, NOAA

FINDINGS

Twenty three (23) key informants took part in the mapping exercise in Beni. The connections between travellers and stationary communities in the epicentre, main towns, along mobility pathways were examined.

Points of interest were allocated into three categories: *Points of Congregation of travelers* (where internal mobility is experienced such as markets, churches, universities, playgrounds), *Points of Entry (PoEs)* (border crossings for both human and livestock, and entry points to towns and territories); and *major junctions and bridges*. Points were prioritized based on significant **volume** of mobility and strong **connections** to the epicenter of the outbreak. A total of 227 points were identified, of which 112 priority points were selected for immediate response actions – surveillance, hand washing, risk communication and community engagement (See Table I).

Table I. Summary of Points of Interest identified during Population Mobility Mapping in Beni, 14 August 2018

Identified Points of Interest								
Beni Town			Total Beni Town	In the 4 Councils areas			Total council areas	TOTAL
Points of Congregation of Travelers	POE in Beni Town	Junction and Bridges		Point of Congregation of Travelers	POE in Beni Territory	Junction and Bridges		
130	5	3	138	72	9	8	89	227
Priority Points of Interest								
Beni Town			Total Beni Town	In the 4 Councils areas			Total council areas	TOTAL
Points of Congregation of Travelers	POE in Beni Town	Junction and Bridges		Points of Congregation of Travelers	POE in Beni Territory	Junction and Bridges		
62	5	3	70	27	9	6	42	112

High mobility pathway and population flow trends:

- Strong and high mobility between **Mambasa - Mangina** (original epicenter) and **Butembo** (main transit point & commercial center) and **Kampala** in Uganda. Routes included: (1) Mambasa-Teturi- Makeke- Mangina; (2) Mangina- Kyanzaba- Beni- Maboya- Butembo; (3) Kyanzaba- Mabalako- Maboya- Butembo; and (4) Beni- Kasindi- Kampala.
- **Butembo** is the commercial center and main transit point for traders and miners coming from **Epulu and Mambassa to Uganda**. The farmers bring agriculture products (rice, corn, palm oil etc) produced in Mangina to local market and after transactions, the traders bring those to sell goods in large cities including Goma, Bukavu and across the border in Uganda.
- Motorcycles are the most frequently used mode of transportation for communities in this region. However, public buses and freight trucks are also used for long distance travel, in particular for routes from Mambasa to Butembo and Kampa to Beni.
- Major border POEs with high cross border populations along Uganda are in the North (Nobili) and in the South (Kasindi and Lake Albert through Kasindi and Kyavinyonge Port) with prolonged border lines and multiple informal crossing points. In the northern part of the border with Uganda (Watalinga Council area) the movement of the population and goods toward Beni is reduced due to the active rebel groups in the area. In southern North Kivu, the movement of the population and goods is gradually increasing despite sporadic insecurity on the high way. Other majors PoE in Beni Territory are **Erengeti** in the North, **Mangina** in the West and **Maboya** in the South.
- The main entrance to Beni town by road is **Passisi** from the West, **Mavivi Barriere** from the North, **Paida PK5** from the South east and **Mukulia** from the South. Beni has one air entry point, **Mavivi Aiport**.
- Two ports on Lake Albert (**Kasindi Port** and **Kavinyonge Port**) are functional and communicate with Uganda and the territory of Rushuru and Goma. Main activities at ports are fishing and cached fishes are predominately sold in the markets in Beni and Butembo.
- Large livestock farms exist in the Kabache community where movement is limited by insecurity. Large cattle is also imported from Uganda via the Kasindi border post. Transport of cattle is conducted by shepherds who follow the main roads and sometimes take irregular routes depending on the level of river water in the area.
- The recent attacks by armed groups around Beni town resulted in major population displacement who are located in Beni surrounding areas and with host families in the city center.
- Beni has a primary school, secondary college and a university, **classes will resume on the 5th September**. Movement of students is expected prior to this date from remote rural towns including Mangina and Makeke back to Beni, and from Beni to schools in remote areas outside of Beni (various).

Priority points of interest: Points of Entry (PoE), major congregation points, junctions and bridges**Mangina (epi center)**

Mangina is the epicentre of the current outbreak. The priority points for Mangina are; **Makeke** due the height volume of the travellers passing through coming from Ituri province en route to Beni, Mabalako, Kasindi, Butembo and Uganda, and; **Kyanzaba** an important junction for the travellers coming from Beni and Mabalako.

Beni (Town)

Beni, an urban setting, is directly connected to the epi center health zone, Mabalako by road. Priority road entry/exits and junctions have been identified due to their connectivity to large market sites, where hundreds of people congregate in crowded and unsanitary conditions. These markets connect travellers who use the land roads, from neighbouring localities, all the way to Kasindi PoE on the Ugandan border. The priority points are: **Passisi, Paida PK5, Mavivi Barriere, Mavivi Aeroport and Mukulia.**

Beni (Territory)

Beni Territory hosts Mangina (the epicentre) and is the main transit territory for all travellers coming from Ituri province going to the Butembo city (large trade centre) and Uganda. Beni territory is a major agricultural producer (cacao, rice, palm oil and corn) in the region that attract traders from several areas in eastern DRC. Priority points include: **Kasindi Barrier, Kasindi Port, Kyaninyongue Port, Erengeti, Makeke, Maboya and Visiki.**

CONCLUSION AND RECOMMENDATIONS

Population Mobility Mapping (PMM) was conducted to provide key and timely information on priority PoEs and vulnerable areas to be considered in the current Ebola response. Data has allowed the Congolese Ministry of Health (MoH), PNHF, WHO and other public health and humanitarian actors on the ground to better understand population mobility trends in the region and their link to transmission risks, and response vulnerabilities of communities and points of entry. The increasing EVD reporting cases in the North Eastern part of the territory where population mobility is primarily affected by **insecurity**, will constitute a major challenge for the response, both for DRC and its neighbour, Uganda.

Specific recommendations based on mapping results include;

- **Surveillance:** Strengthen surveillance along the population pathways of (1) Mambasa—Teturi—Makeke—Mangina; (2) Mangina—Kyanzaba—Beni—Maboya—Butembo and (3) Kyanzaba—Mabalako—Maboya—Butembo, and (4) Beni—Kasindi. ‘Sanitary Control Point’ may be established at internal points within DRC, to distinguish them from PoEs at border stations.
- **Prevention:** Reinforce WASH interventions at academic institutions (schools and universities) and public gathering points in Beni and Butembo as well as in mining sites in Epulu region.
- **Risk Communication:** Strengthen risk communication within the main population pathways of (1) Mambasa—Teturi—Makeke—Mangina; (2) Mangina—Kyanzaba—Beni—Maboya—Butembo and (3) Kyanzaba—Mabalako—Maboya—Butembo, and (4) Beni—Kasindi.

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