Impact of the Haiti crisis on population mobility
Part 1 | Estimated relocation flows between the Metropolitan Area of Port-au-Prince (ZMPAP) and the rest of Haiti (April to October 2024)

Key observations (April - October 2024)

1. Estimated net flows between the Metropolitan Area of Port-au-Prince (ZMPAP) and the rest of Haiti from April to October 2024 are small compared to previous months and years:
    a. more people moved out than into the ZMPAP (- 4,930) over April to July 2024
    b. but slightly **more people moved in than out of the ZMPAP (+10,930) over July to October 2024, which has not often occurred since 2021.**
2. Locations from which more people have moved into the ZMPAP (in pink on the maps) include communal sections in Gressier and Arcahaie, where armed attacks have taken place in May and October 2024 respectively.
3. Locations into which more people have moved from the ZMPAP (in blue on the maps) were throughout the country and especially in the South, up to July 2024. However, from July to October, they are mainly in the North, and notably still include the Ounaminthe border point.

Within the ZMPAP, we estimate large population changes per communal section (page 2), however as a whole the estimated population of the Metropolitan Area of Port-au-Prince (ZMPAP) remains constant from April 2024 and up to the end of October 2024 (page 3). This is a consequence of the relatively small netflows with the rest of Haiti shown here (as natural growth and international migrations are not included in our population estimates).

*Data used: monthly estimates of **population** per communal section (admin3) and estimates of population flows between communal sections each month (change in dominant monthly location) - **derived from anonymous mobile phone usage data (CDRs), weighted using survey data and based on baseline population estimates** (see our platform https://haiti.mobility-dashboard.org for our dataset and methodology change in November 2024). CDR-derived statistics are experimental and difficult to validate. Our methods aim to best extract and weight mobility information from CDRs, however, magnitudes and trends presented here may still contain errors that we cannot estimate at this time.*

Change in the number of ZMPAP residents from April to July 2024 (total net flow)

- 4,930

Change in the number of ZMPAP residents from July to October 2024 (total net flow)

+ 10,930

The five largest net inflows (positive net flows) to the ZMPAP from July to October 2024 were from these communal sections :

Net flows for the ZMPAP = inflows to ZMPAP - outflows from ZMPAP (for each communal section)
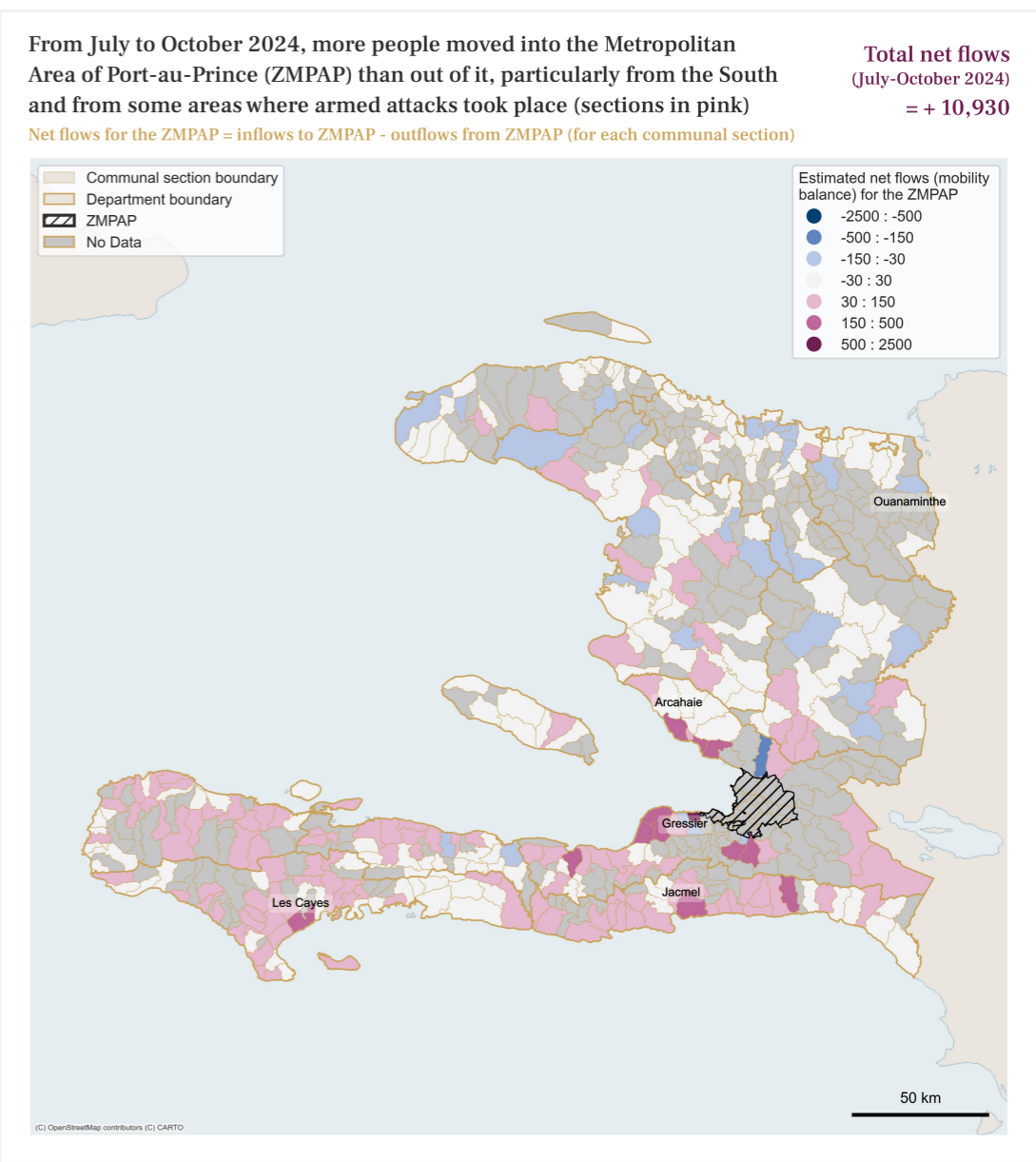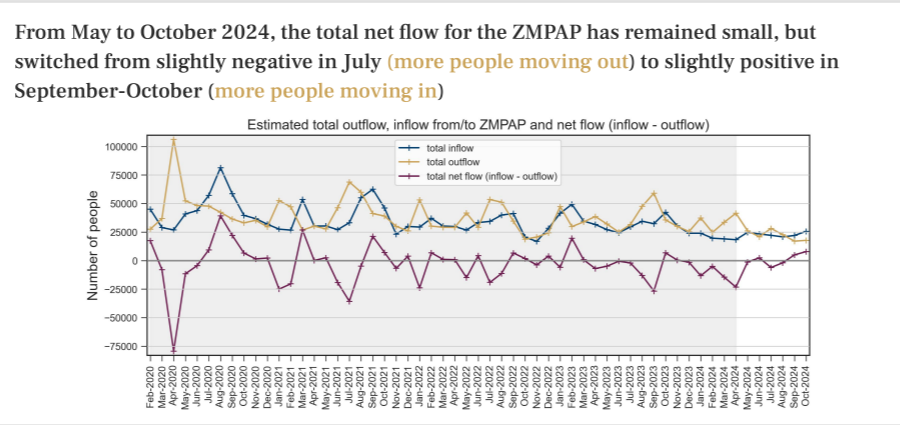
Department	Commune	Communal section	Net flows for the ZMPAP (estimated number of people)
Ouest	Gressier	1re Section Morne à Bateau	1,010
Ouest	Kenscoff	3e Section Sourcailles	500
Ouest	Cabaret	1re Section Boucassin	480
Ouest	Arcahaie	3e Section des Vases	350
Ouest	Léogâne	3e Section Grande Rivière	270
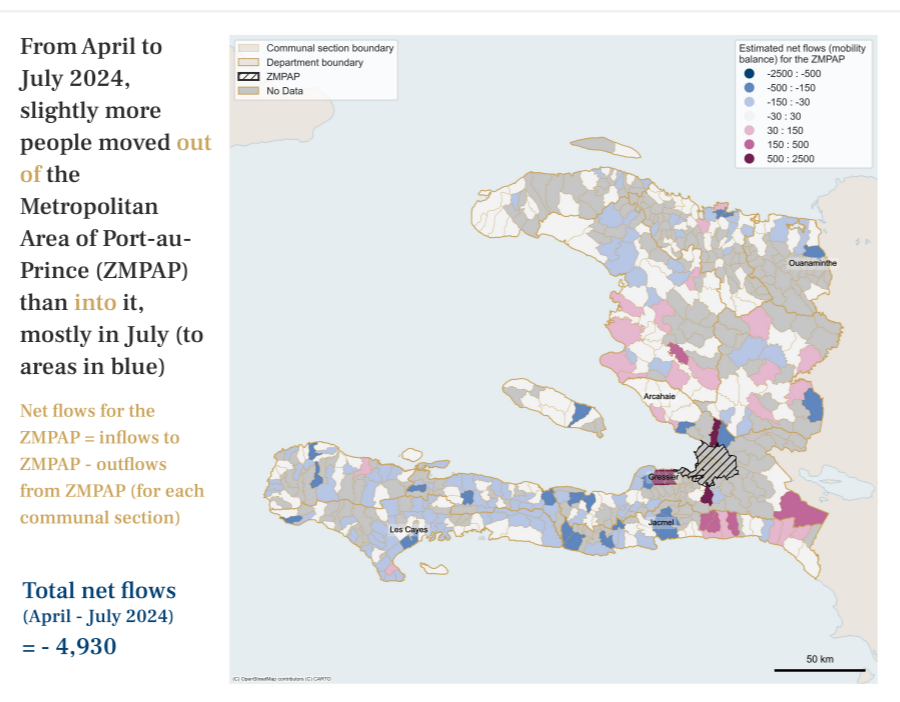
The five largest net outflows (negative net flows) from the ZMPAP from July to October 2024 were to these communal sections:

Net flows for the ZMPAP = inflows to ZMPAP - outflows from ZMPAP (for each communal section)

Department	Commune	Communal section	Net flows for the ZMPAP (estimated number of people)
Ouest	Croix-Des-Bouquets	9e Section des Crochus	-250
Nord-Est	Ounaminthe	1re Section Haut Maribaroux	-120
Centre	Thomonde	4e Section La Hoye	-120
Nippes	Anse-à-Veau	3e Section Saut du Baril	-110
Ouest	Gressier	2e Section Morne Chandelle	-90

From April to July 2024, slightly more people moved out of the Metropolitan Area of Port-au-Prince (ZMPAP) than into it, mostly in July (to areas in blue)

Net flows for the ZMPAP = inflows to ZMPAP - outflows from ZMPAP (for each communal section)

Total net flows (April - July 2024) = - 4,930

Map legend: Communal section boundary; Department boundary; ZMPAP; No Data. Estimated net flows (mobility balance) for the ZMPAP: -2500 : -500; -500 : -150; -150 : -30; -30 : 30; 30 : 150; 150 : 500; 500 : 2500

From May to October 2024, the total net flow for the ZMPAP has remained small, but switched from slightly negative in July (more people moving out) to slightly positive in September-October (more people moving in)

Estimated total outflow, inflow from/to ZMPAP and net flow (inflow - outflow)

From July to October 2024, more people moved into the Metropolitan Area of Port-au-Prince (ZMPAP) than out of it, particularly from the South and from some areas where armed attacks took place (sections in pink)

Net flows for the ZMPAP = inflows to ZMPAP - outflows from ZMPAP (for each communal section)

Total net flows (July-October 2024) = + 10,930

Map legend: Communal section boundary; Department boundary; ZMPAP; No Data. Estimated net flows (mobility balance) for the ZMPAP: -2500 : -500; -500 : -150; -150 : -30; -30 : 30; 30 : 150; 150 : 500; 500 : 2500

---

info@flowminder.org
@Flowminder
www.flowminder.org
haiti.mobility-dashboard.org

USAID FROM THE AMERICAN PEOPLE   Digicel   FLOWMINDER.ORG

Protracted Crisis report
Long term monitoring

Published: 25 November 2024

Impact of the Haiti crisis on population mobility
Part 2 | Population change within the Metropolitan Area of Port-au-Prince (ZMPAP) due to mobility
(July to October 2024)

FLOWMINDER.ORG

Net flows to ZMPAP communal sections from communal sections outside ZMPAP, from July to October 2024
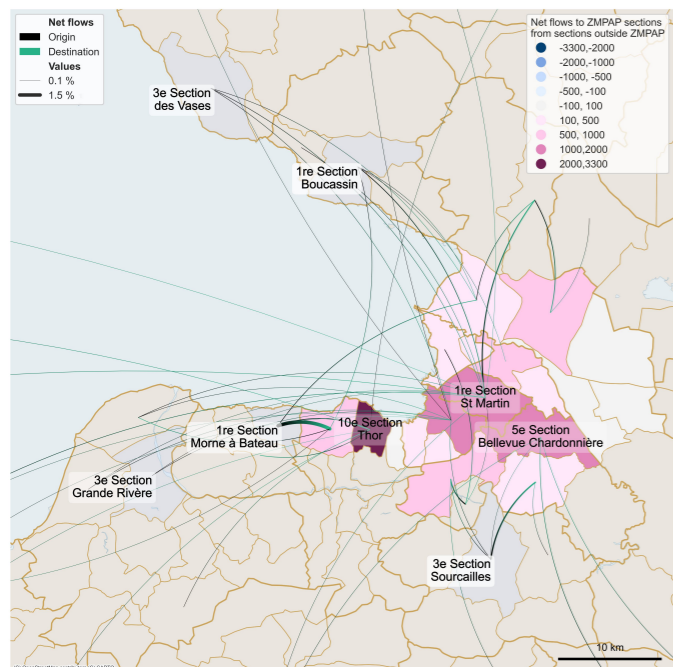
Key observations (July to October 2024)

1. **Mobility within the ZMPAP had a greater impact on population change in ZMPAP communal sections** than mobility between the ZMPAP and the rest of Haiti, for July to October 2024 (see table)
   a. For each ZMPAP section, **population change = total net flow = net flow with sections outside ZMPAP + net flow with other ZMPAP sections**
   b. E.g., the population of section Turgeau decreased (-930), in spite of an additional 1,190 residents from outside the ZMPAP, because 2,120 people left Turgeau to relocate to other sections within the ZMPAP.
2. People from areas affected by armed attacks mainly relocated to Turgeau and St-Martin (from Arcahaie) and to Rivere Froide and 1re section des Varreux (from Gressier)
3. Overall, the ZMPAP communal sections which most increased in population over Jul-Oct 2024 are Thor in Carrefour (+3,170), Etang du Jonc (+1,960) and Bellevue la Montagne (+1,700) in Pétion-Ville, and Bellevue (+1,720) in Tabarre.
4. Rivière Froide in Carrefour (-1,990 people), and Turgeau (-930 people) and Morne l'Hôpital (-610 people) in Port-au-Prince decreased in population during Jul-Oct 2024 (due to large net outflows to other ZMPAP sections and in spite of net inflows from outside the ZMPAP.

Our population estimates are derived from estimates of mobility within Haiti only and do not include estimates of natural growth and international migration. The magnitude of short distance flows could be overestimated due to the routing of mobile network communications, in spite of our methodological developments to prevent this.

Net flows between communal sections within the ZMPAP, from July to October 2024

Estimated population change due to mobility, from July to October 2024, for each communal section of the ZMPAP.
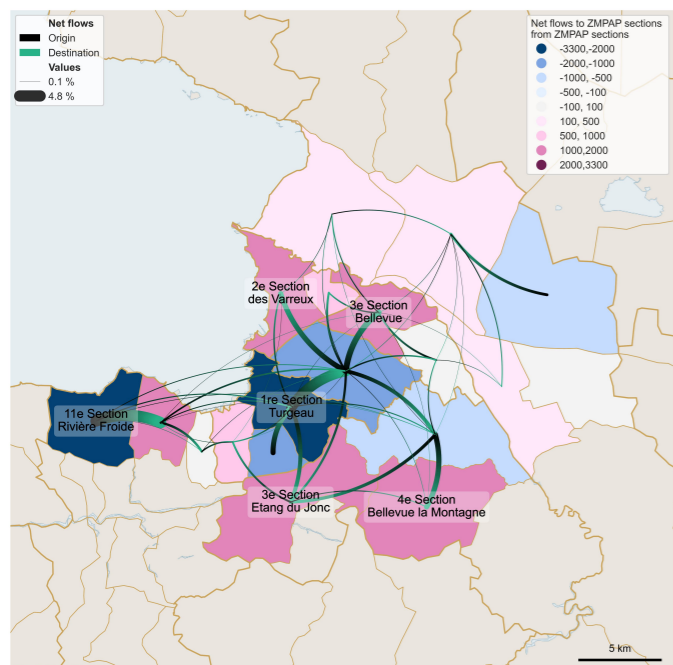
Population change (July to October) = population(October) - population(July) = sum(net flows) from July to October

Estimated population change in ZMPAP communal sections, due to mobility within and outside of the ZMPAP, from July to October 2024

Commune	Communal section	Population change (= total net flow)	Net flows to ZMPAP sections from other ZMPAP sections	Net flows to ZMPAP sections from outside sections
Carrefour	11e Section Rivière Froide	-1,990	-2,610	620
Port-au-Prince	1re Section Turgeau	-930	-2,120	1,190
Port-au-Prince	2e Section Morne l'Hôpital	-610	-1,000	390
Croix-Des-Bouquets	5e Section Petit Bois	-510	-510	0
Croix-Des-Bouquets	4e Section Petit Bois	90	50	40
Carrefour	9e Section Bizoton	160	100	60
Tabarre	4e Section Bellevue	230	40	190
Delmas	1re Section St Martin	310	-1,440	1,750
Croix-Des-Bouquets	3e Section Petit Bois	390	370	20
Pétion-Ville	5e Section Bellevue Chardonnière	480	-750	1,230
Croix-Des-Bouquets	1re Section des Varreux	600	200	400
Croix-Des-Bouquets	2e Section des Varreux	730	150	580
Cité Soleil	1re Section des Varreux	850	710	140
Port-au-Prince	3e Section Martissant	1,230	850	380
Cité Soleil	2e Section des Varreux	1,360	1,240	120
Pétion-Ville	4e Section Bellevue la Montagne	1,700	1,290	410
Tabarre	3e Section Bellevue	1,720	1,040	680
Pétion-Ville	3e Section Etang du Jonc	1,960	1,230	730
Carrefour	10e Section Thor	3,170	1,150	2,020

Protracted Crisis report
Long term monitoring

Published: 25 November 2024

Impact of the Haiti crisis on population mobility
Part 3 | Estimated population change of 7 large urban areas due to mobility
Overview of the last ~5 years: January 2020 to October 2024

FLOWMINDER.ORG

~5 year trend in urban population due to mobility within Haiti.

The estimated ZMPAP population has, for the first time since 2020, dropped to under 3 millions in 2024 (even lower than during the 2020 COVID-19 mobility restrictions) and has decreased by 180,000 residents since 2021.

ZMPAP population: -1.34% a year

Number of residents in ZMPAP, per month

Covid restrictions — Lift of restrictions — Episodes of intensified gang violence

Number of ZMPAP residents

Date	ZMPAP population*
Jan 2020	3,1645,00
Jan 2021	3,134,680
Jan 2022	3,085,400
Jan 2023	3,033,620
Jan 2024	2,991,550
Oct 2024	2,954,780
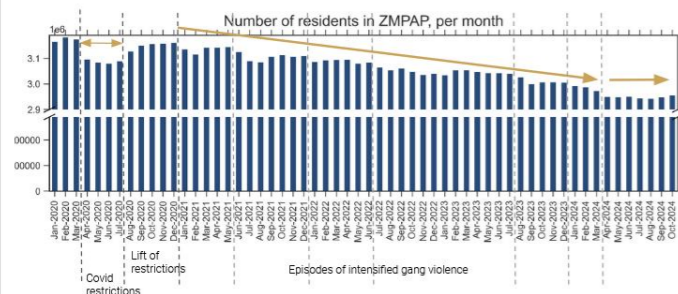
Annual change in ZMPAP residents

Year	Change in ZMPAP population*
Jan 2020 - Jan 2021	-29,820
Jan 2021 - Jan 2022	-49,280
Jan 2022 - Jan 2023	-51,780
Jan 2023 - Jan 2024	-42,070
Jan 2024 - Oct 2024	-36,770

Gonaïves population: +1.0% a year

Number of residents in Gonaïves, per month

Covid restrictions and lift
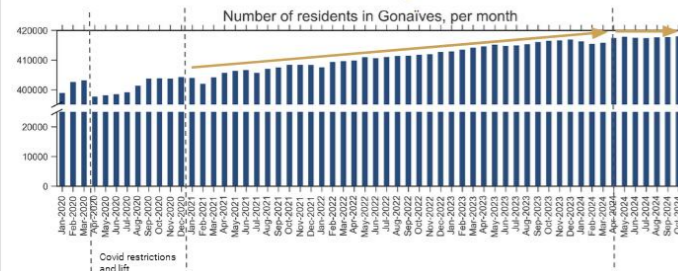
Number of Gonaïves residents

Date	Gonaïves population*
Jan 2020	398,850
Jan 2021	403,940
Jan 2022	407,540
Jan 2023	412,870
Jan 2024	416,330
Oct 2024	417,980

Annual change in Gonaïves residents

Year	Change in Gonaïves population*
Jan 2020 - Jan 2021	+ 5,090
Jan 2021 - Jan 2022	+ 3,600
Jan 2022 - Jan 2023	+ 5,330
Jan 2023 - Jan 2024	+ 3,460
Jan 2024 - Oct 2024	+ 1,650

Cap Haitien population: -0.12% a year

Number of residents in Cap-Haïtien, per month

Covid restrictions and lift — Fuel shortages and network outages
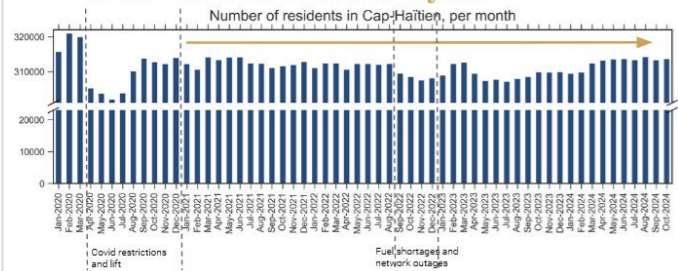
Number of Cap Haitien residents

Date	Cap Haitien population*
Jan 2020	315,580
Jan 2021	312,120
Jan 2022	310,920
Jan 2023	308,820
Jan 2024	309,380
Oct 2024	313,560

Annual change in Cap Haitien residents

Year	Change in Cap Haitien population*
Jan 2020 - Jan 2021	-3,460
Jan 2021 - Jan 2022	-1,200
Jan 2022 - Jan 2023	-2,100
Jan 2023 - Jan 2024	+560
Jan 2024 - Oct 2024	+4,180

Saint-Marc population: +0.4% a year

Number of residents in Saint-Marc, per month

Covid restrictions and lift
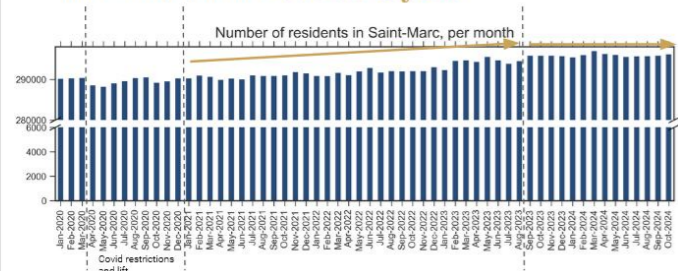
Number of Saint-Marc residents

Date	Saint-Marc population*
Jan 2020	290,120
Jan 2021	290,190
Jan 2022	290,800
Jan 2023	292,230
Jan 2024	295,420
Oct 2024	296,090

Annual change in Saint-Marc residents

Year	Change in Saint-Marc population*
Jan 2020 - Jan 2021	+70
Jan 2021 - Jan 2022	+610
Jan 2022 - Jan 2023	+1,430
Jan 2023 - Jan 2024	+3,190
Jan 2024 - Oct 2024	+670

Key observations (2020 to 2024)

1. The estimated **population of the ZMPAP has declined overall since January 2021** (by nearly 180,000 people, -1.34% a year on average), and dropped under 3 million for the first time in early 2024 during this time period.
2. More recently (**April to the end of October 2024), the estimated population of the ZMPAP as a whole has remained relatively constant**, as a result of reduced mobility with the rest of Haiti.
   a. This is a relatively long period without a decline compared to previous years.
   b. However, large population changes are estimated for communal sections within the ZMPAP (+/- 2000, over Jul-Oct 2024) mainly due to mobility among them (see page 2).
3. Since 2021, other large cities have increased in estimated population instead (Gonaives, Jacmel, Les Cayes and Jérémie by over 1% a year on average), with the exception of Cap Haitien, which has been rather stable since 2021.

Estimates of monthly residents are based on the change in dominant location where subscribers are present for each calendar month to the next (monthly relocations). The number of subscribers relocating are weighted to obtain a number of people, but natural growth and international migrations are not taken into account. Estimates of mobility provided in this report are larger than in our previous protracted crisis report (May 2024, see reference on p.4) thanks to a methodological improvement (see our platform https://haiti.mobility-dashboard.org for our dataset and methodology change in November 2024). However, they may still be underestimates of mobility, because CDRs are not available for all communal sections in the country, and because the CDR dataset is decreasing over time, possibly leading to a reduction in magnitude of our estimated flows and therefore in population change.
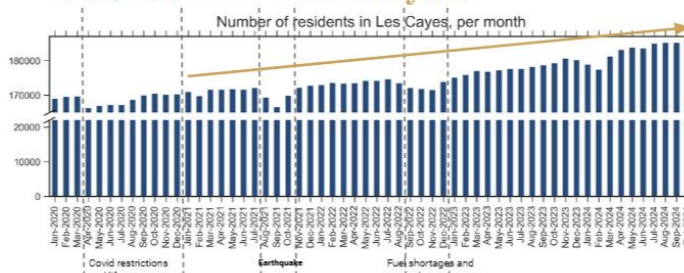
Jacmel population: +1.4% a year

Number of residents in Jacmel, per month

Covid restrictions and lift
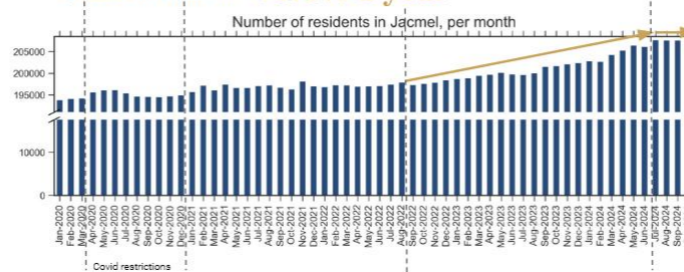
Number of Jacmel residents

Date	Jacmel population*
Jan 2020	193,750
Jan 2021	195,620
Jan 2022	196,790
Jan 2023	198,630
Jan 2024	202,810
Oct 2024	207,820

Annual change in Jacmel residents

Year	Change in Jacmel population*
Jan 2020 - Jan 2021	+ 1,870
Jan 2021 - Jan 2022	+ 1,170
Jan 2022 - Jan 2023	+ 1,840
Jan 2023 - Jan 2024	+ 4,180
Jan 2024 - Oct 2024	+ 5,010

Les Cayes population: +1.9% a year

Number of residents in Les Cayes, per month

Covid restrictions and lift — Earthquake — Fuel shortages and network outages

Number of Les Cayes residents

Date	Les Cayes population*
Jan 2020	168,920
Jan 2021	170,920
Jan 2022	172,970
Jan 2023	175,070
Jan 2024	178,800
Oct 2024	185,820

Annual change in Les Cayes residents

Year	Change in Les Cayes population*
Jan 2020 - Jan 2021	+2,000
Jan 2021 - Jan 2022	+2,050
Jan 2022 - Jan 2023	+2,100
Jan 2023 - Jan 2024	+3,730
Jan 2024 - Oct 2024	+7,020

Jérémie population: +1.3% a year

Number of residents in Jérémie, per month

Covid restrictions and lift
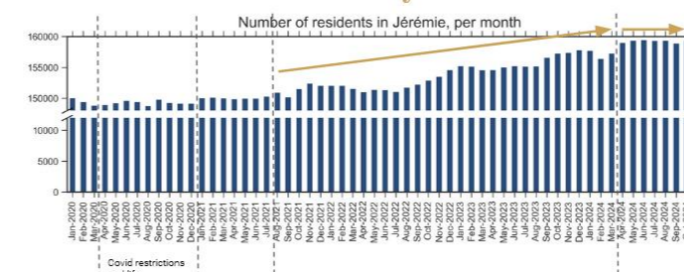
Number of Jérémie residents

Date	Jérémie population*
Jan 2020	150,010
Jan 2021	150,020
Jan 2022	152,020
Jan 2023	155,160
Jan 2024	157,680
Oct 2024	159,320

Annual change in Jérémie residents

Year	Change in Jérémie population*
Jan 2020 - Jan 2021	+ 10
Jan 2021 - Jan 2022	+ 2,000
Jan 2022 - Jan 2023	+ 3,140
Jan 2023 - Jan 2024	+ 2,520
Jan 2024 - Oct 2024	+ 1,640

Protracted Crisis report
Long term monitoring

Published: 25 November 2024

Impact of the Haiti crisis on population mobility
Part 4 | About this work: Background & considerations

FLOWMINDER.ORG

About this work

Flowminder's 'Population Mobility Data for Disaster Management' project aims to improve the availability and use of mobile operator data (Call Detail Records, CDR data)-derived population-scaled estimates on population mobility, density and/or displacement data among humanitarian actors, with a particular focus on Haiti. Through this project, Flowminder will enable access to, and use of reliable and user-friendly information by humanitarian organisations for disaster preparedness and response, while strengthening its CDR processing and analysis software, FlowKit, to better support humanitarian sector data needs.

Authors & funders

This report was authored by the Flowminder Foundation.

This work is made possible by the generous support of the American People through the United States Agency for International Development (USAID). The contents are the responsibility of the Flowminder Foundation and do not necessarily reflect the views of USAID or the United States Government. This project is led by the Flowminder Foundation.

Acknowledgements

We welcome feedback to help us improve future reports and requests for specific types of analysis.

Please email info@flowminder.org with any feedback and suggestions, or if you have any specific analytical requirements we can support

Data privacy & governance

No personal data, such as an individual's identity, demographics, location, contacts or movements, is made available to the government or any other third party at any time. All results produced by Flowminder are aggregated results (for example, subscriber density in a given municipality), which means that they do not contain any information about individual subscribers.

This data is fully anonymised. This approach complies with the European Union's General Data Protection Regulation (EU GDPR2016/679). Data is processed on a server installed behind the mobile network operator's firewall in Haiti, and no personal data leaves the operator's premises.

Data considerations

The estimates shown are our best current assessment of movements. However, there are a number of uncertainties. The information should be interpreted together with other available evidence.

For more information about our methods, please read our *Haiti Mobility Data Indicators* documentation on residents and relocation here.

Data sources
- Pseudonymised mobile phone usage data from Digicel Haiti
- Data products: Flowminder

Previous report(s)

Flowminder Foundation, May 2024. Impact of the Haiti crisis on mobility: Relocations from the Metropolitan Area of Port-au-Prince (01 January 2020 - 30 April 2024)

https://www.flowminder.org/resources/publications-reports/impact-of-the-haiti-crisis-on-mobility-relocations-from-the-metropolitan-area-of-port-au-prince-january-2020-april-2024