

Displaced and diverse

Demographic, socio-economic, and land use profiles for 349 million internal displacements worldwide

Working paper

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Abstract

Internal displacements due to conflict and disasters are a major driver of global human mobility. While the total numbers of internal displacements by cause and geographical location are increasingly well tracked, a significant gap remains in the availability of disaggregated data on key variables – such as age, sex, education, livelihood – for the populations impacted by these events. Data from localised case studies can provide this granularity; however, they are difficult to generalise to other contexts. This lack of disaggregated profiles complicates the work of decision makers tasked with allocating resources efficiently to address the diverse vulnerabilities and needs of impacted communities. Here we contribute to bridging this knowledge gap by providing harmonised global estimates of the age, sex, income, education, health, and land use profiles of populations in locations impacted by internal displacements. We derived these estimates by combining geolocated data of ~27,000 internal displacement events between 2018 and 2024, representing a total of 349 million displacements, with gridded global maps of demographic, socio-economic, and land use variables. While patterns vary across displacement causes and geographical regions, our analysis reveals that internal displacements are overall concentrated in areas with disproportionately vulnerable populations – characterised by high shares of children, low income levels, limited education, and poor access to healthcare –, and that these vulnerabilities have been deepening.

1. Introduction

Internal displacements due to conflict and disasters are a major driver of human mobility worldwide, with over 400 million internal displacements recorded in the past decade alone (IDMC, 2024a). These events, induced by violence, war, floods, earthquakes, and other calamities, have far-reaching social, economic, and political implications (Betts, 2009; Ruiz and Vargas-Silva, 2013; Weiss and Korn, 2006). Internally displaced populations face tremendous challenges as they are forced to abandon their homes, livelihoods, and communities, resulting in social disintegration, economic disruption, and in many cases, protracted hardship (Arcaya et al., 2020; Cuadrado et al., 2023; Fiala, 2015; Weiss and Korn, 2006). Displacement also poses a substantial challenge for host communities, national governments, and the wider international humanitarian

system in delivering assistance, restoring livelihoods, and facilitating durable solutions (Crisp, 2006; Davies, 2012; Deng, 2004; Zetter, 2014).

The increasing scale of internal displacement has coincided with significant advances in the volume and quality of available data, offering valuable insights for governmental, humanitarian, and developmental actors and improving support for affected communities (IDMC, 2024a; Sarzin, 2017). Traditional ground surveys have been complemented by advances in technology, such as satellite imagery and mobile device data, enabling a more precise and comprehensive understanding of displacement patterns (Bircan, 2022; Cumbane and Gidófalvi, 2021; Heslin and Thalheimer, 2020; Wilson et al., 2016; Wu et al., 2021). These innovations have helped humanitarian actors to plan more effectively, allocate resources more efficiently, and tailor their responses to the unique conditions of each crisis. As a result, interventions have become more targeted, reducing response times and improving outcomes for displaced communities.

While global estimates of internal displacement numbers by cause and region are increasingly well tracked (IDMC, 2024a), a significant gap remains in the availability of disaggregated data on key variables, such as age, sex, education, and livelihood, for the populations impacted by these events (Masaki and Madson, 2023; Sarzin, 2017). Outside of specific case studies, this lack of detailed data complicates the efforts of decision makers, as the needs of different groups – such as children and the elderly, men and women, populations with fewer or more economic resources, rural and urban communities – often vary drastically (Abbasi-Shavazi and Kraly, 2021; Cantor et al., 2021; Jesuthasan et al., 2019; Pape and Verme, 2023). This data gap represents a critical obstacle for policymakers and humanitarian actors tasked with designing evidence-based, targeted interventions that meet the distinct needs of diverse displaced populations and provide durable solutions to forced displacement.

Here, we contribute to bridging this gap by producing harmonised quantitative estimates of the demographic, socio-economic, and land use profiles of populations living in areas affected by internal displacements worldwide. Our analysis focuses on four key dimensions:

- Demographic structure: examining the age and sex distribution of affected populations;
- Socio-economic profile: exploring income, education, and health indicators;
- Land use and geography: investigating agricultural, pastoral, and urban populations.

We derive our estimates by combining a large geolocated global dataset of internal displacements with gridded global maps of demographic, socio-economic, and land use variables. Importantly, the scope of our analysis is limited to profiling the general populations at the time and location where internal displacements occurred, rather than the displaced individuals themselves. While ground surveys conducted during displacement events provide valuable direct insights into those who move (IOM, 2025), they lack the global coverage and methodological consistency needed for a comprehensive assessment. In the absence of such direct data, our estimates serve as a statistical baseline, offering a globally consistent picture of the populations living in displacement-affected areas and helping inform more responsive and equitable policy interventions.

2. Methods

Our analysis uses the Internal Displacement Monitoring Centre (IDMC)'s Internal Displacement Updates (IDU) dataset, comprising 26,851 records of internal displacement events due to conflict, floods, storms, wildfires, earthquakes, droughts, and other disasters, spanning 2018 to 2024, and representing a total of

349,046,588 internal displacements (IDMC, 2024b). Supplementary Figure 1 maps the spatial distribution, magnitude, and causes of these events, and Supplementary Figure 2 shows the regional distribution of displacements by cause. Each record contains the year of the event, geographical coordinates (typically at administrative level 1 (province, state, etc.) resolution), the cause of displacement, and the number of displacements. We combined these records with global gridded maps of the following socio-economic and geographical variables, all available at 0.083° resolution (approximately 10 km at the equator): local age and sex structure (World Population Hub, n.d.), per-capita gross national income (GNI), average life expectancy, mean years of schooling (Kummu et al., 2018), and the percentage of land covered by cropland, grazing land, and urban land (Klein Goldewijk et al., 2017).

To integrate these data with the displacement records, we aggregated all maps to administrative level 1 level as the population-weighted average of the grid cells within each administrative unit (World Population Hub, n.d.). For per-capita GNI, we used the weighted median; for all other variables, the weighted mean. After assigning local values to each displacement event, we computed the distribution of each variable – for each displacement cause, geographical area (global and world regions), and time (individual years and all years combined) – by weighting each event’s local value by its associated number of displacements. We used an analogous methodology to compute distributions for the general population (i.e., not only those in displacement areas), weighing grid cell values by the local population size (World Population Hub, n.d.). In addition to the cross-sectional results for the 2018–2024 period, we also assessed temporal trends in the average values of demographic, socio-economic, and land use variables across displacement events, using t-tests to evaluate the statistical significance of changes over time.

We re-emphasise that our approach does not directly assess the profiles of internally displaced individuals, but of the general populations residing in locations where internal displacements occurred. For easier readability, we occasionally use the term ‘displacement-affected populations’ to refer to this group.

3. Results

In this section, we present the profiles of displacement-affected populations for each variable. Each subsection begins with a brief explanation of the variable’s relevance to humanitarian response in displacement settings. Given the breadth of variables, our aim is not to provide a comprehensive review or exhaustive discussion of prior case study findings. The summary is followed by quantitative results disaggregated by displacement cause. While the main text focusses on global-level patterns, regional-level results are provided in the Supplementary Material. Estimated profiles for all variables and displacement causes, at global, regional, and national level, are available as Supplementary File 1.

3.1. Demographic profiles

Age and sex are key determinants of vulnerability and needs in internal displacement contexts, as children, adults, older persons, women, and men face distinct challenges that humanitarian and development responses must address. Children are typically more susceptible to malnutrition, exploitation, and disrupted education, with lasting effects on their development and well-being (Bernhardt et al., 2024; Bürgin et al., 2022; Mort et al., 2018; Pfefferbaum et al., 2016). Older individuals may experience mobility constraints, chronic health conditions, and reduced access to healthcare, heightening their vulnerability during and after displacement (Bolin and Klenow, 1983; Koşar, 2024; Ngo, 2001; Virgincar et al., 2016). Sex and gender also shape displacement experience, with women – particularly those who are pregnant, nursing, or caring for

children – often facing heightened health, safety, and livelihood challenges during displacement (Bradshaw and Fordham, 2015; Gururaja, 2000; Rohwerder, 2016). Gender-based violence, including sexual exploitation, abuse, and trafficking, often increase in displacement settings (Wirtz et al., 2014). Additionally, access to essential sex-specific services, such as reproductive healthcare and sanitary supplies, may be limited (Ivanova et al., 2018; Logie et al., 2024). Understanding the age and sex structure of affected populations enables more tailored and effective interventions – whether for child protection, elder care, or gender-sensitive service provision.

3.1.1. Age

Our analysis reveals substantial differences in the age profiles of populations in areas of internal displacement. With an average age of 22.3 years, displacement-affected populations are overall markedly younger than the general world population at an average age of 30.8 years (Figure 1). An estimated 68% of affected individuals are younger than that global average age. Populations affected by conflict displacements are overall younger (19.5 years) than those affected by disasters (27.5 years), reflecting the young demographics of conflict-prone regions in Sub-Saharan Africa, Northern Africa, and Western Asia (Supplementary Figure 3). Among disaster types, drought-related displacements are associated with the youngest populations (average age 18.1 years), in line with the demographic structure of drought-affected areas, especially in Sub-Saharan Africa. At the opposite end of the spectrum, wildfire-displacement-affected populations are significantly older (average age 37.1 years), reflecting the demographics of Northern America and Europe, where such displacements are most frequent.

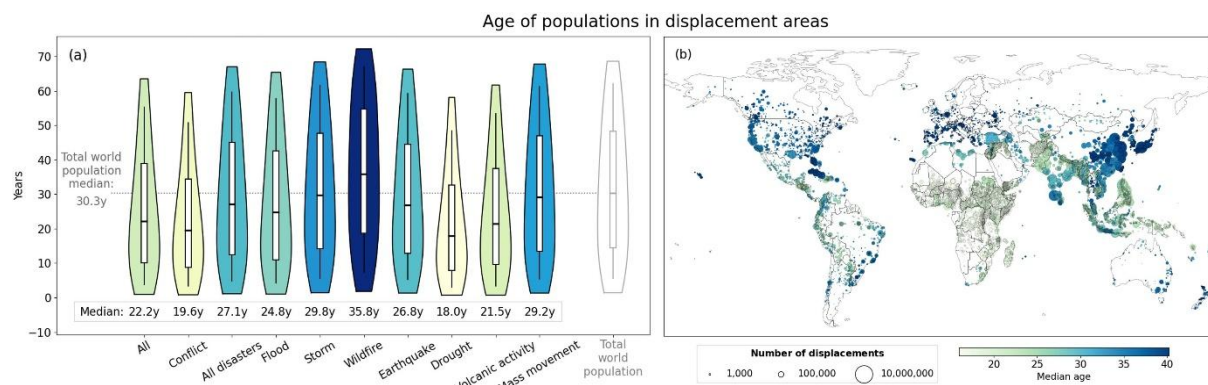


Figure 1. Age distribution of populations in locations impacted by internal displacement. (a) In this and the following figures, box plots show medians (thick black lines; numerical values are provided at the bottom), interquartile ranges, and 10th and 90th percentiles (whiskers). Violin plots visualise the distributions in more depth. For easier comparison, their colours correspond to the distribution medians, with yellow and blue representing the lowest and highest median, respectively. The grey violin and box plot at the far right represent the total world population. Supplementary Figure 3 shows distributions disaggregated by world region. (b) Global map of the local median age in all displacement event locations.

These patterns align with our estimates for the proportion of children (0–14 year-olds) in displacement-affected populations. On average, 37% of individuals in these areas are children, compared to 24% for the general world population, with populations affected by conflict displacement including more children (41%) than those affected by disaster displacements (29%) (Figure 2). Within the disaster category, average percentages of children are particularly high and low in drought- and wildfire-displacement-affected populations (44% and 19%), respectively. These patterns are consistent for infants (0–1 year-olds) (Supplementary Figure 4). Conversely, the share of older adults (65+ year-olds) is lower in displacement-affected populations (3.6%) compared to the general world population (7.5%). Proportions are highest and

lowest in locations that experienced displacements due to wildfire (14%) and drought (2.7%), respectively (Supplementary Figure 4).

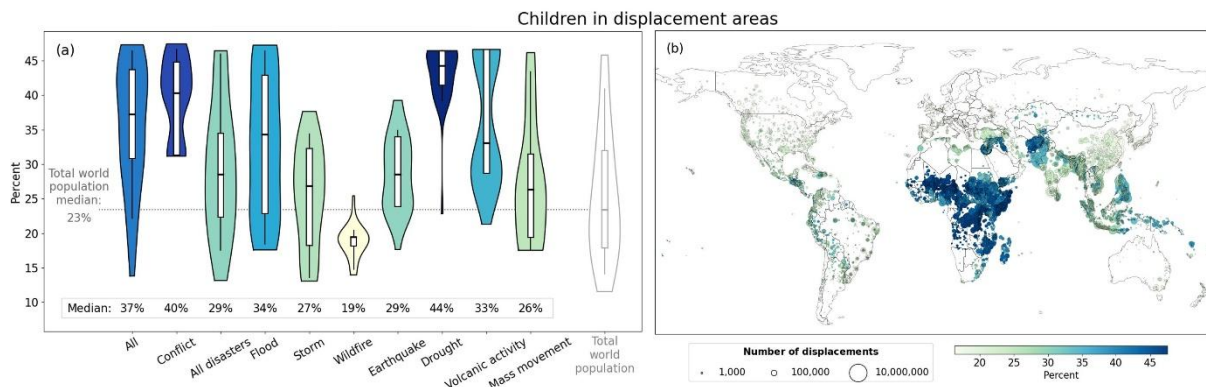


Figure 2. Percentage of children in populations in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.1.2. Sex

The average percentage of females among populations in areas of internal displacement is 49.3%, slightly below the global average of 49.6% (Figure 3). Conflict- and disaster-related displacements show minimal differences, with women comprising 49.3% and 49.4% of populations in impacted areas, respectively, on average. Across specific disaster types, wildfire and volcanic displacements are associated with the highest average proportion of females (50.5%), while drought displacements show the lowest (49.1%), reflecting underlying regional sex ratio differences.

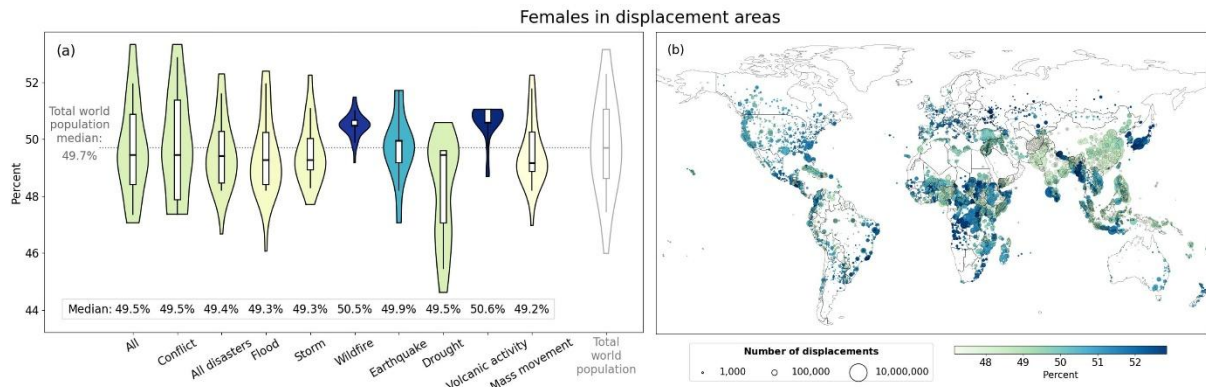


Figure 3. Percentage of females in populations in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.1.3. Temporal trends

From 2018 to 2024, there was a highly significant trend of displacements occurring in areas with increasingly younger populations ($p=0.006$) (

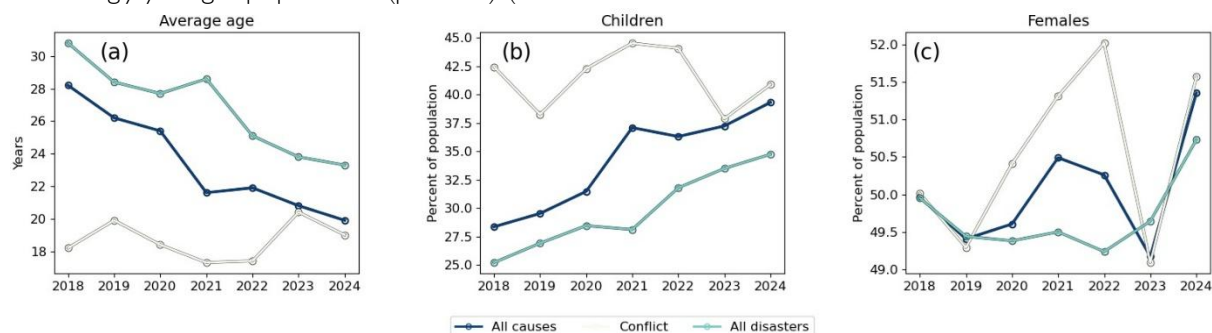


Figure 4a). The average age in affected areas dropped from 28.2 years in 2018 to 19.9 years in 2024. This shift was driven by a highly significant ($p=0.01$) decline in the average age of the different populations that over time were affected by displacement caused by disasters, particularly floods and storms (Supplementary Figure 5). No significant age trend was observed in areas affected by conflict-related displacements ($p=0.7$). In line with these findings, there was a highly significant trend between 2018 and 2024 of displacements in general, and disaster displacements in particular, occurring in areas with higher proportions of children ($p=0.001$ and $p=0.0002$, respectively) (

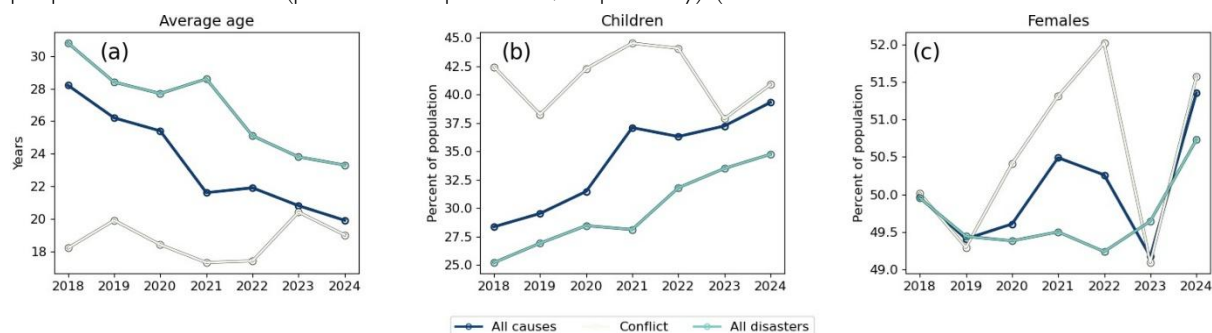


Figure 4b). The average percentage of females in displacement areas increased overall slightly but not significantly ($p=0.3$) (

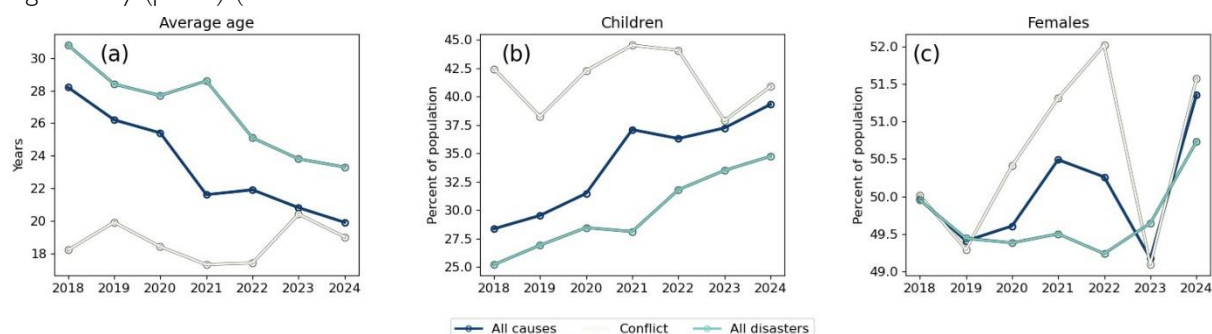


Figure 4c).

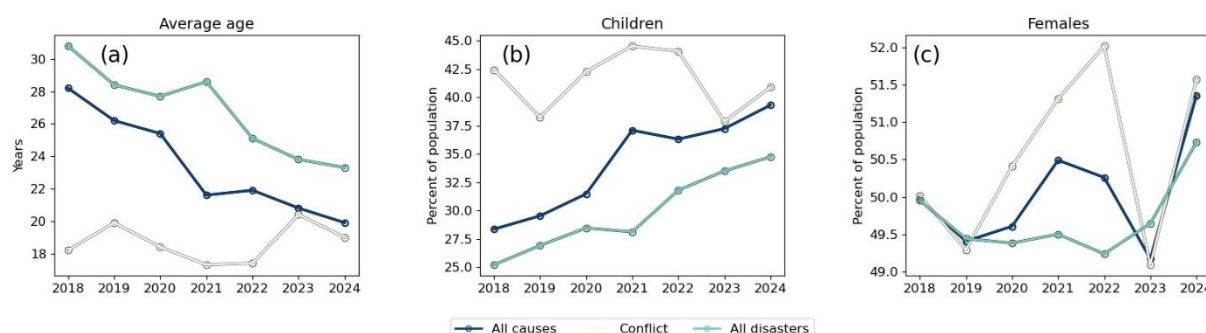


Figure 4. Trends in averages of demographic variables in locations impacted by internal displacement over time. Each line represents the annual displacements-weighted medians of the relevant variable, i.e., the same as the medians shown in the box plots in the preceding figures but now computed separately for each year. For clarity, disasters are shown aggregated together; Supplementary Figure 6 shows trends by individual disaster type.

3.2. Socio-economic profiles

Income, education, and health are interrelated and often correlated socio-economic factors that strongly shape the vulnerability and resilience of displaced populations. Low-income individuals and households are often less able to absorb shocks, recover from losses, and access essential services such as healthcare, education, and safe housing. Displacement can exacerbate economic vulnerabilities, as displaced individuals may lose their livelihoods, face barriers to employment, and have limited access to social safety nets (Admasu et al., 2021; Fothergill and Peek, 2004; Hallegatte et al., 2020; Mucherera and Spiegel, 2022; Vestby et al., 2024). Education is a key factor for the long-term well-being and resilience of displaced populations. Access to education can be severely disrupted by displacement, impacting children's learning and development, and limiting future opportunities for employment and economic stability (Bridges and Walls, 2018; Englund, 2018; Ghaffar-Kucher, 2018; Kovac et al., 2022). For adults, education levels often affect the ability to secure jobs, navigate bureaucratic processes, and access services in displacement settings (Bridges and Walls, 2018). Displaced populations with lower educational attainment may face greater challenges in adapting to new environments, accessing information, and advocating for their rights (Bridges and Walls, 2018). Health is a critical concern in displacement situations, as impacted populations often face heightened health risks due to disrupted healthcare services, inadequate living conditions, and increased exposure to disease and malnutrition (Cuadrado et al., 2023; Thomas and Thomas, 2004; Zilic, 2018). Life expectancy is a key indicator of overall health and well-being, reflecting the cumulative impact of factors such as access to healthcare, nutrition, and living conditions (James and Devaux, 2017). Displaced populations with lower life expectancies are more vulnerable and may require targeted health interventions, including emergency medical care, mental health support, and programs addressing chronic diseases (Cantor et al., 2021; Shortall et al., 2021). Understanding the income, educational, and health profiles of displaced populations is crucial for informing targeted support such as cash assistance, livelihood programs, and economic integration initiatives, designing interventions that enhance access to education and skill development, and prioritising healthcare needs through effective interventions aimed at improving health outcomes.

3.2.1. Income

Our analysis reveals deep income divides between populations in locations of internal displacement versus the general world population as well as between different displacement causes. The average annual per-capita income (GNI) in 2017 US dollars of displacement-affected populations globally is \$5,700, around half of the general world population average of \$11,000 (Figure 5). An estimated 86% of affected persons earn less than that global average. At \$7,600, the average annual income of populations affected by disaster

displacements is higher than that of conflict-displacement-affected populations (\$5,700), though, with substantial variations between disaster types. Populations affected by drought (\$1,900) and flood displacement (\$4700), notably Sub-Saharan Africa and Central and Southern Asia (Supplementary Figure 3), face the most severe economic vulnerability and lack of financial resilience on average, while populations affected by wildfire displacement stand out as the group with the highest average income (\$66,000) – and the only one that is not below the general global average – driven by the occurrence of many wildfire displacements in high-income regions of Northern America and Europe.

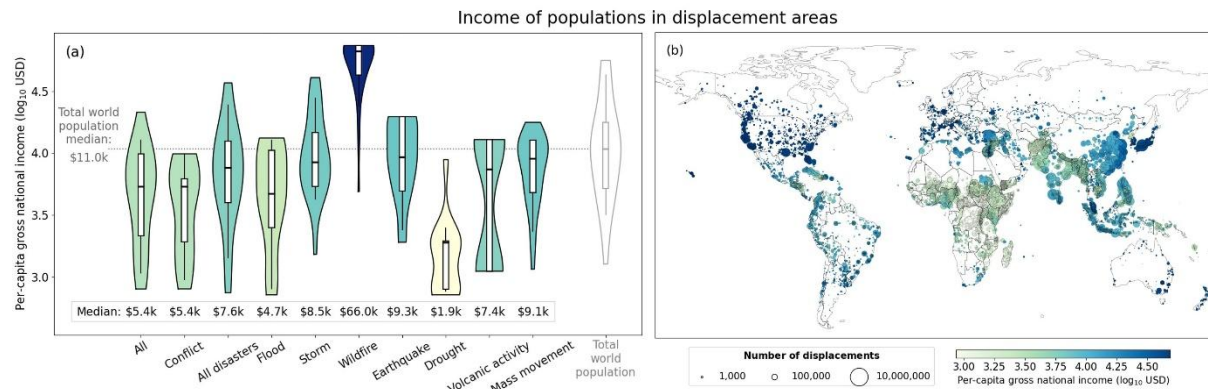


Figure 5. Average annual income of populations in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.2.2. Education

Our results for educational attainment closely match those for income, given a strong overall correlation between these two variables. We find that the average number of schooling years among populations in locations of internal displacement is 6.5 years, which is below the general global average of 7.7 years (Figure 6). An estimated 66% of affected persons received less education than that global average. Disaster-displacement-affected populations have more years of schooling on average (7.4 years) than those affected by conflict displacement (6.5 years). Within the disaster group, average schooling time is shortest for populations in areas of drought displacement (2.6 years) and longest for wildfire displacement (13.0 years). Averages for other disasters range relatively closely, between 6.3 and 7.9 years, though, with marked variation across and within regions (Supplementary Figure 3). In addition to wildfire, storms and earthquakes are the only causes for which average schooling years of displacement-affected populations are not below the general global average.

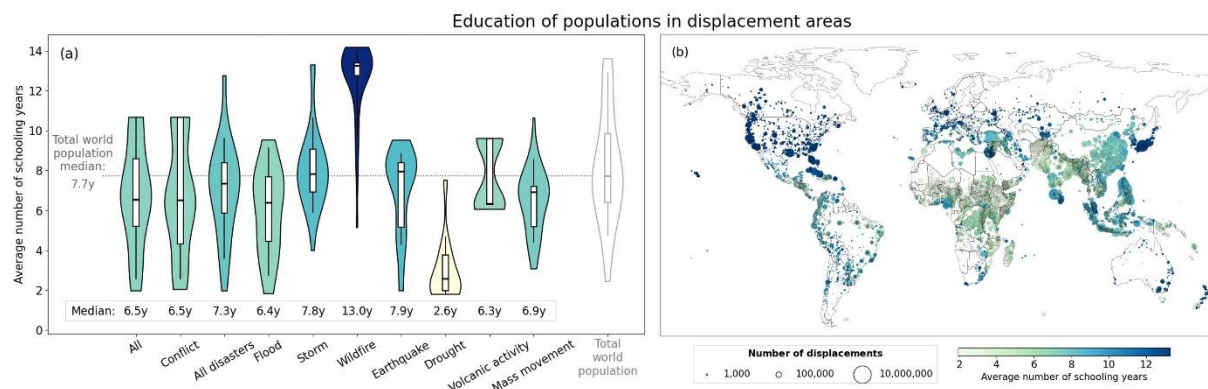


Figure 6. Average number of schooling years of populations in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.2.3. Health

Our results in this section are similar to those in the previous two, given strong correlations between the three variables. The average life expectancy of populations in locations of internal displacement is 68.2 years, markedly lower than the general world average of 74.3 years (Figure 7). For an estimated 68% of affected persons, life expectancy is below that global average. At 73.0 years, the average life expectancy of populations affected by disaster displacement is higher than that of conflict-displacement-affected populations (68.2 years), though, with substantial variations between disaster types. Populations affected by drought (62.9 years), notably in Sub-Saharan Africa, where food insecurity and limited access to clean water exacerbate health risk, have the lowest average life expectancy, while those affected by wildfire (81.0 years) have the highest. As in the case of income, all displacement causes except wildfire are associated with average life expectancies below the general global average.

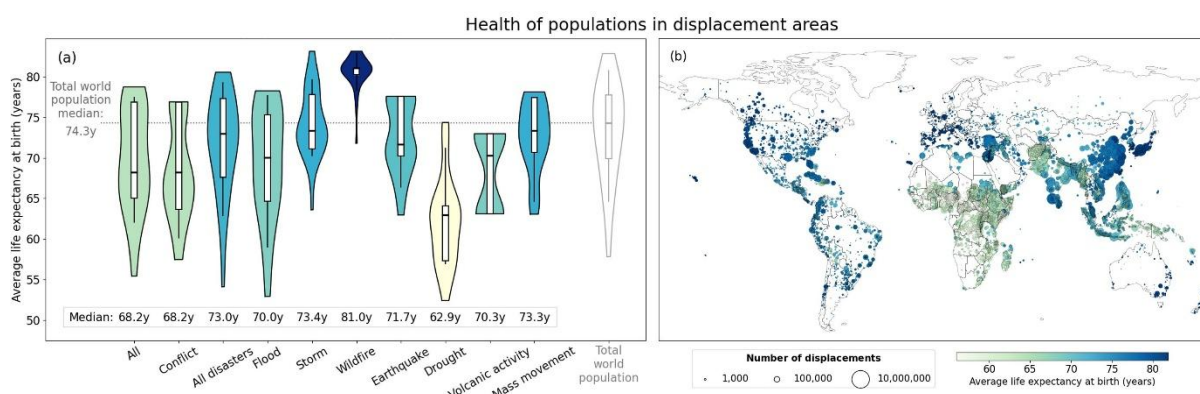


Figure 7. Average life expectancy at birth of populations in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.2.4. Temporal trends

From 2018 to 2024, there was a marginally significant trend of displacements occurring in areas with increasingly lower annual income ($p=0.08$) (Figure 8a). Compared to \$9800 in 2018, the average annual income of populations in areas impacted in 2024 was \$2100. This was driven by a highly significant ($p=0.009$) decrease in the average income of the different populations that over time were affected by displacement caused by disasters, in particular wildfires and storms (Supplementary Figure 5), whereas there was no significant income change over time in areas of conflict displacements ($p=0.83$). Areas that experienced displacements in general and disaster displacements in particular were also characterised by an overall decreasing average number of schooling years of the local populations, although these trends are not significant ($p=0.2$ and $p=0.1$, respectively) (Figure 8b). In contrast, the average number of schooling years increased significantly over time ($p=0.02$) in conflict displacement areas. Similar to income, life expectancy decreased marginally significantly ($p=0.09$) in displacement areas overall, highly significantly in disaster displacement areas ($p=0.002$), and did not change significantly in conflict displacement areas ($p=0.4$) (Figure 8c).

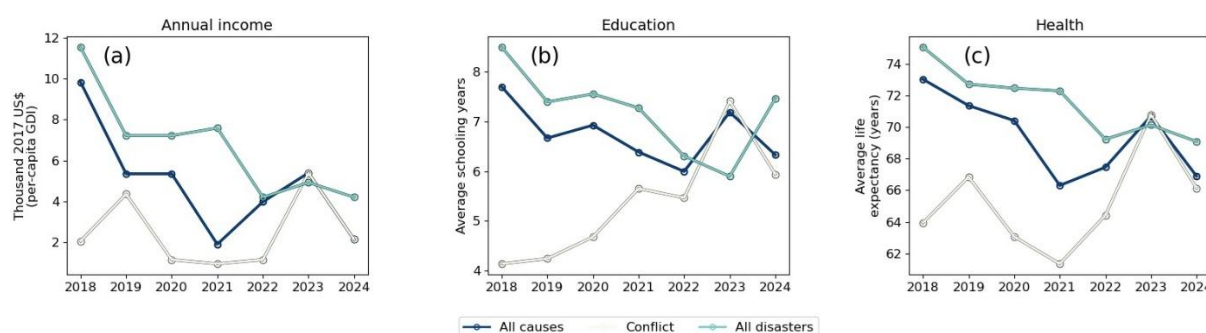


Figure 8. Trends in averages of socio-economic variables in locations impacted by internal displacement over time. See caption of

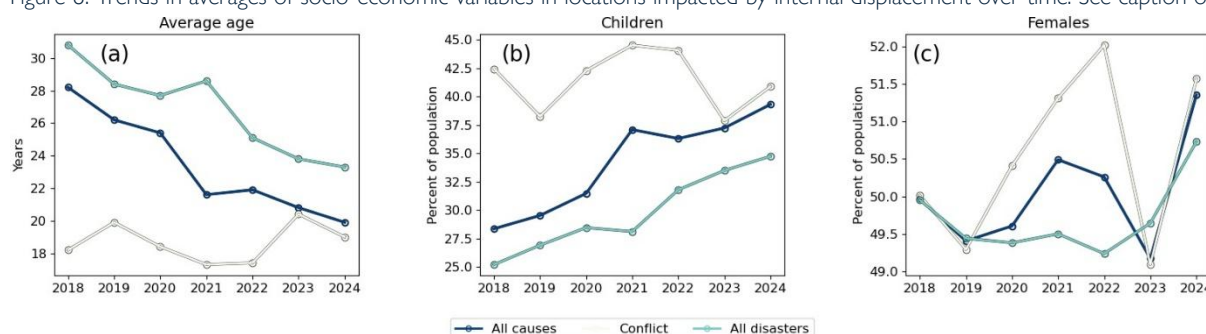


Figure 4 for details of the charts.

3.3. Land use profiles

Land use data are a critical factor in understanding the diverse needs and challenges faced by displaced populations, as livelihoods and vulnerabilities vary significantly between those living in agricultural, pastoral, and urban environments. In cropland areas, farmers face unique challenges during displacement events, as their livelihoods are directly tied to the land and agricultural labour on it. Displacement disrupts access to farmland, crops, and livestock, leading to loss of income and food insecurity, particularly for subsistence farmers. Additionally, displaced farming communities may struggle to access tools, seeds, and agricultural support needed to rebuild livelihoods (Amirthalingam and Lakshmanb, 2015; Chapagain and Raizada, 2017). Pastoralist communities, dependent on grazing land for their livestock, face equally severe challenges, particularly when environmental factors like drought drive displacement. Unlike farmers, pastoralists rely on mobility and access to oftentimes vast grazing areas, and displacement can confine them to spaces where traditional herding practices are no longer viable, threatening their livelihoods (Avis, 2018; Blocher, 2018; Bonneau, 2013; IDMC, 2014). Urban populations also experience distinct difficulties during displacement, including the need to find temporary housing, go to work, access urban services, and navigate complex recovery processes. Urban displacement can also exacerbate resource scarcity in host communities, leading to overcrowding and competition for essential services (Crisp et al., 2012; IDMC, 2018; Pantuliano et al., 2012). Understanding the differing needs of displaced farming, pastoralist, and urban populations is therefore key for designing targeted interventions that address food security, livelihood restoration, and the integration of displaced persons into both rural and urban contexts.

3.3.1. Cropland

At 21%, the average fraction of cropland in locations of internal displacement is markedly below the general global average of 37% in populated areas (Figure 9). This is driven by the low value in areas of internal displacement due to conflict (15%), particularly in Northern Africa and Western Asia, whereas the value

in areas of disaster displacement (37%) coincides with the general average. Areas in which floods and storms – the two causes that together account for 89% of all disaster-related displacements worldwide in the dataset used here – led to displacements include the highest average fraction of cropland with 42% and 40%, respectively, highlighting their disproportionate impact on farming communities. In contrast, drought and wildfire displacements occur in areas with an average fraction of cropland of only 5% and 4%, respectively. This reflects the geographical distribution of drought-prone areas, which are typically less suitable for intensive farming due to water scarcity, as well as wildfire-prone areas, which tend to be at the forest-urban interface rather than on agricultural land.

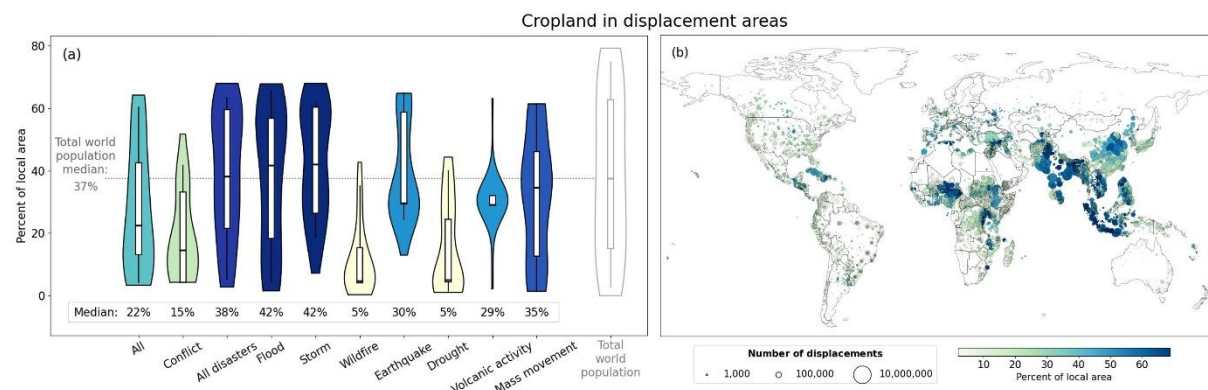


Figure 9. Cropland in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.3.2. Grazing land

In contrast to cropland, the average fraction of grazing land in areas that experienced internal displacements (12%) is higher than in general populated areas (4%), driven particularly by the high percentage in areas of conflict displacement (18%) over areas of disasters displacement (6%) (Figure 10). There is no displacement cause for which the average fraction of grazing land in affected areas is lower than the general average; indeed, average grazing land fractions in areas impacted by displacement due to drought (41%), followed by mass movement (21%) and earthquake (17%) are substantially higher. The value for drought displacements, in particular, is strongly driven by the very high fraction of grazing land in impacted areas in Sub-Saharan Africa (75%; Supplementary Figure 3).

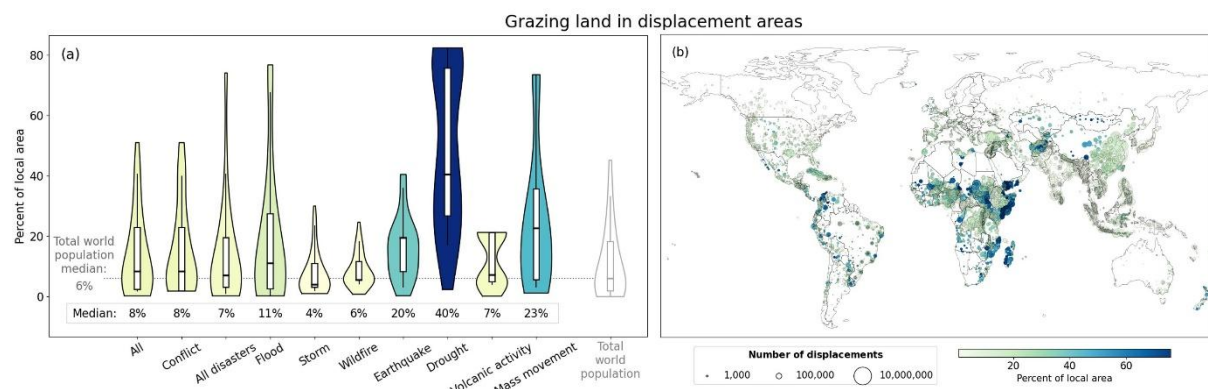


Figure 10. Grazing land in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.3.3. Urban land

At 17%, the average fraction of land characterised as urban in locations of internal displacements is above the general global average of 10% in populated areas (Figure 11). This is driven by the high value in areas

of internal displacement due to conflict (44%), whereas the value in areas of disaster displacement (11%) is close to the general average. Among disaster types, the average fraction of urban land is particularly low in areas impacted by displacement due to drought (1%) (consistent with the high fraction of grazing land in these areas) and particularly high in areas of wildfire displacement (69%), which are typically located at the forest-urban interface.

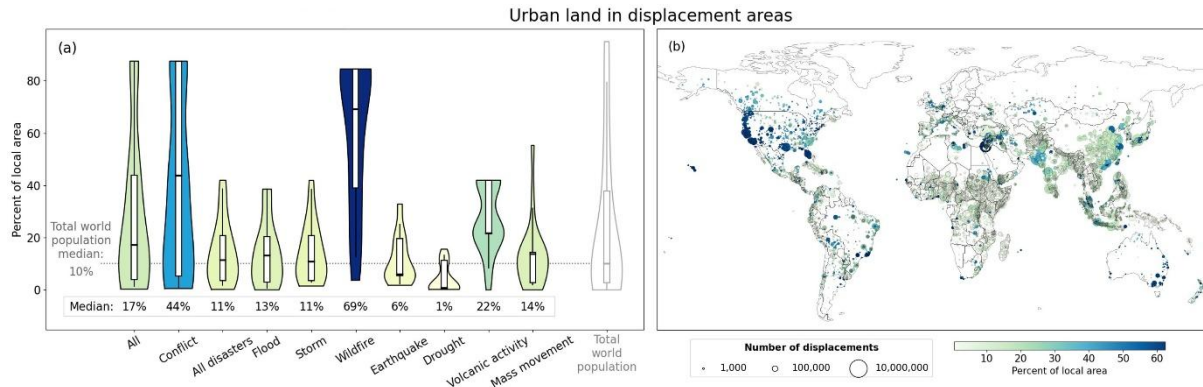


Figure 11. Urban land in locations impacted by internal displacement. See caption of Figure 1 for details of the charts.

3.3.4. Temporal trends

From 2018 to 2024, the average percentage of cropland, grazing land, urban land in the different areas that over time experienced displacements in general, as well as disaster and conflict displacement in particular, did not change significantly ($p > 0.05$ for all) (Figure 12). Examining specific disaster types, we notably find that for areas of wildfire displacement over time, there was a highly significant decrease in the average percentage of urban land ($p=0.005$) (where wildfire displacements are overall most prevalent; Figure 11), accompanied by a highly significant increase in the average percentage of cropland ($p=0.009$) (where wildfire displacements are overall least prevalent; Figure 9) (Supplementary Figure 5).

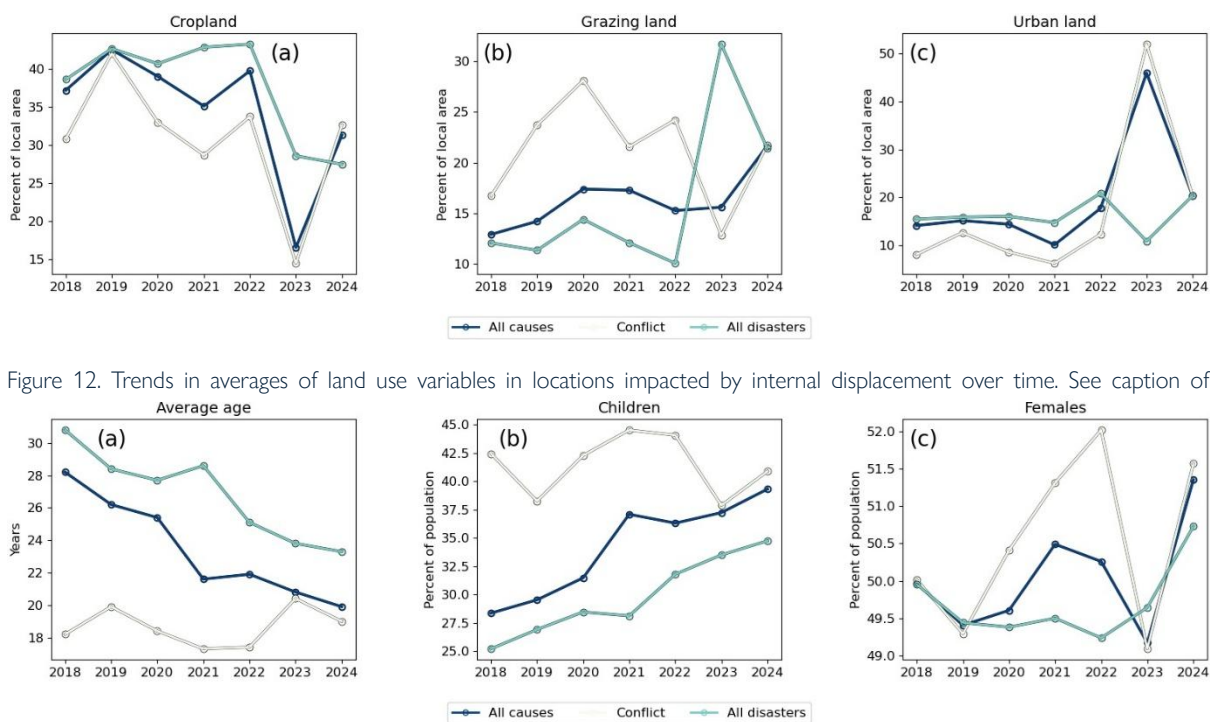


Figure 12. Trends in averages of land use variables in locations impacted by internal displacement over time. See caption of Figure 4 for details of the charts.

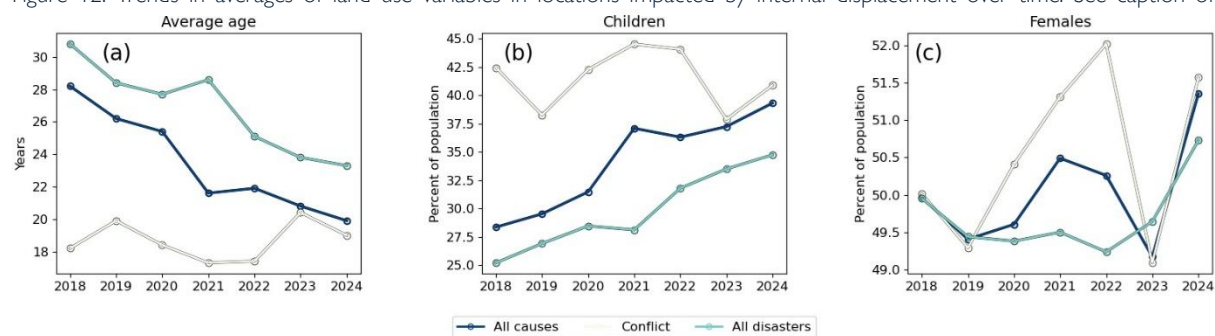


Figure 4 for details of the charts.

4. Discussion

Here, we presented harmonised quantitative estimates of demographic, socio-economic, and land use profiles for populations in areas impacted by internal displacement worldwide. Our methodology integrated geolocated data for circa 349 million displacements between 2018 and 2024 with gridded global maps of demographic, socio-economic, and geographical variables, enabling the estimation of granular profiles that provide insights into local contexts and vulnerabilities.

Our results highlight the disproportionate vulnerability of populations living in displacement areas. A striking 86%, 86%, 66%, and 68% of these have a higher proportion of children, lower annual income, fewer years of schooling, and lower life expectancy than the global average. Moreover, temporal analyses indicate that internal displacements are occurring in increasingly vulnerable regions, with notable decreases in age, income, educational attainment, and life expectancy among affected populations over time. These findings reveal that internal displacement disproportionately impacts younger and economically disadvantaged populations with limited access to education and healthcare – and, importantly, does so at an accelerating rate –, underscoring the urgent need for tailored humanitarian interventions that address these specific vulnerabilities.

We observed distinct demographic and socio-economic differences across various displacement causes. For instance, internal displacement caused by drought predominantly impacts young, male-skewed, pastoral communities with limited access to economic, educational, and healthcare resources. Conversely, wildfire displacement primarily affects older, female-skewed, urban populations with high income, education, and life expectancy. The contrasts between these profiles highlight the necessity for displacement responses to be context-specific and carefully account for local realities.

Land use analyses revealed that specific displacement causes are closely tied to particular livelihood contexts. While floods and storms affect predominantly farming communities, droughts affect pastoral communities, and conflict and wildfires predominantly impact urban populations. Accounting for these vulnerabilities in displacement responses can help mitigate and recover livelihoods post-displacement.

It is important to reiterate once again that our analysis, constrained by data availability, describes the profiles of populations residing in locations where displacements occurred rather than directly profiling displaced individuals themselves. While direct surveys of displaced populations provide critical insights, their limited global coverage and typically unharmonised methodologies pose challenges for generalising assessments. Hence, despite the limitations, our estimates offer a quantitative baseline, enabling a tentative understanding of displacement contexts at global scale and providing a first estimate of conditions in local contexts where survey data are not yet available. They offer a benchmark for assessing vulnerabilities, monitoring trends, evaluating intervention effectiveness, and guiding sustainable, long-term solutions for internally displaced populations globally.

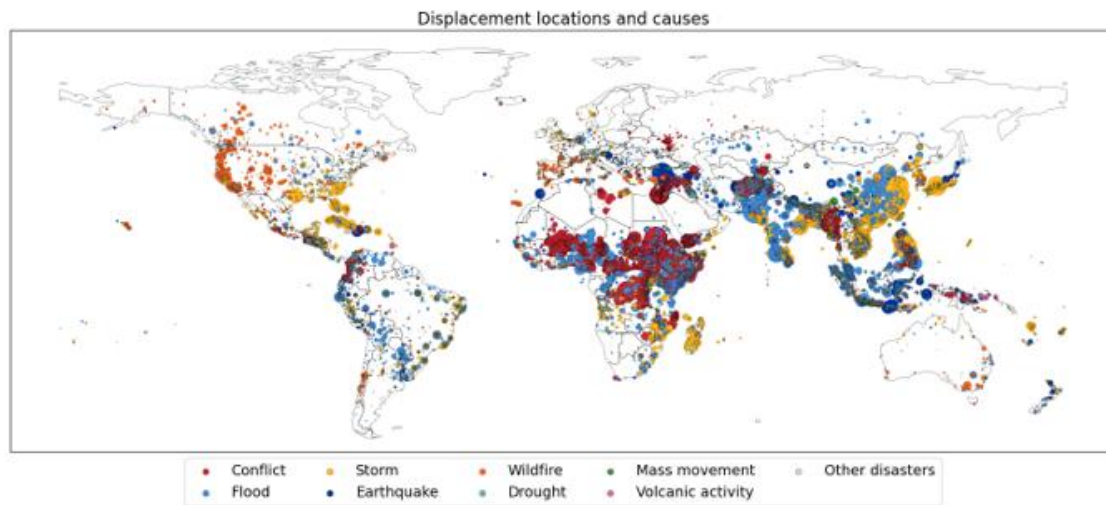
5. References

- Abbasi-Shavazi, M.J., Kraly, E.P., 2021. A demographic perspective on the role of environmental and climate change on forced migration and population displacement. *Popul.-Environ. Res. Netw. PERN Cyberseminar Refug. Internally Displac. Popul. Environ. Impacts Clim. Risks* 1–8.
- Admasu, Y., Alkire, S., Ekhatior-Mobayode, U.E., Kovesdi, F., Santamaria, J., Scharlin-Pettee, S., 2021. A multi-country analysis of multidimensional poverty in contexts of forced displacement.
- Amirthalingam, K., Lakshmanb, R.W., 2015. Impact of internal displacement on agricultural livelihoods: evidence from Sampur, Sri Lanka. *Migr. Dev.* 4, 143–162.
- Arcaya, M., Raker, E.J., Waters, M.C., 2020. The Social Consequences of Disasters: Individual and Community Change. *Annu. Rev. Sociol.* 46, 671–691. <https://doi.org/10.1146/annurev-soc-121919-054827>
- Avis, W., 2018. Rebuilding pastoralist livelihoods during and after conflict. *K4D Help. Rep.* 421.
- Bernhardt, K., Le Beherec, S., Uppendahl, J.R., Fleischmann, M., Klosinski, M., Rivera, L.M., Samaras, G., Kenney, M., Müller, R., Nehring, I., 2024. Young children's development after forced displacement: a systematic review. *Child Adolesc. Psychiatry Ment. Health* 18, 20.
- Betts, A., 2009. *Forced Migration and Global Politics*. Wiley-Balckwell.
- Bircan, T., 2022. Remote sensing data for migration research. *Data Sci. Migr. Mobil. Stud. Oxf. Univ. Press Hong Kong China* 121–148.
- Blocher, J., 2018. Fleeing from arid lands: Pastoralism in the context of climate change, in: *Routledge Handbook of Environmental Displacement and Migration*. Routledge, pp. 188–204.
- Bolin, R., Klenow, D.J., 1983. Response of the Elderly to Disaster: An Age-Stratified Analysis. *Int. J. Aging Hum. Dev.* 16, 283–296. <https://doi.org/10.2190/MQEG-YN39-8D5V-WKMP>
- Bonneau, P., 2013. Drought and internal displacements of pastoralists in Northern Kenya in 2012: an assessment. *State Environ. Migr.*
- Bradshaw, S., Fordham, M., 2015. Double disaster: Disaster through a gender lens, in: *Hazards, Risks, and Disasters in Society*. Elsevier, pp. 233–251.
- Bridges, B., Walls, N., 2018. Migration, displacement and education. *United Nation UNESCO Publ.*
- Bürgin, D., Anagnostopoulos, D., Vitiello, B., Sukale, T., Schmid, M., Fegert, J.M., 2022. Impact of war and forced displacement on children's mental health—multilevel, needs-oriented, and trauma-informed approaches. *Eur. Child Adolesc. Psychiatry* 31, 845–853.
- Cantor, D., Swartz, J., Roberts, B., Abbara, A., Ager, A., Bhutta, Z.A., Blanchet, K., Bunte, D.M., Chukwuorji, J.C., Daoud, N., 2021. Understanding the health needs of internally displaced persons: a scoping review. *J. Migr. Health* 4, 100071.
- Chapagain, T., Raizada, M.N., 2017. Impacts of natural disasters on smallholder farmers: gaps and recommendations. *Agric. Food Secur.* 6, 1–16.
- Crisp, J., 2006. *Forced displacement in Africa: dimensions, difficulties and policy directions*. UNHCR, Evaluation and Policy Analysis Unit.
- Crisp, J., Morris, T., Refstie, H., 2012. Displacement in urban areas: new challenges, new partnerships. *Disasters* 36, S23–S42.
- Cuadrado, C., Libuy, M., Moreno-Serra, R., 2023. What is the impact of forced displacement on health? A scoping review. *Health Policy Plan.* 38, 394–408. <https://doi.org/10.1093/heapol/czad002>
- Cumbane, S.P., Gidófalvi, G., 2021. Spatial distribution of displaced population estimated using mobile phone data to support disaster response activities. *ISPRS Int. J. Geo-Inf.* 10, 421.
- Davies, A., 2012. *IDPs in host families and host communities: assistance for hosting arrangements*. UNHCR [HttpwwwAlnapOrgpoolfiles4fe8732c2 Pdf2012](HttpwwwAlnapOrgpoolfiles4fe8732c2Pdf2012).
- Deng, F., 2004. The plight of the internally displaced: a challenge to the international community. *UN High-Level Panel Threats Chall. Change*.
- Englund, G., 2018. Estimating the number of forcibly displaced school-age children not accessing education.

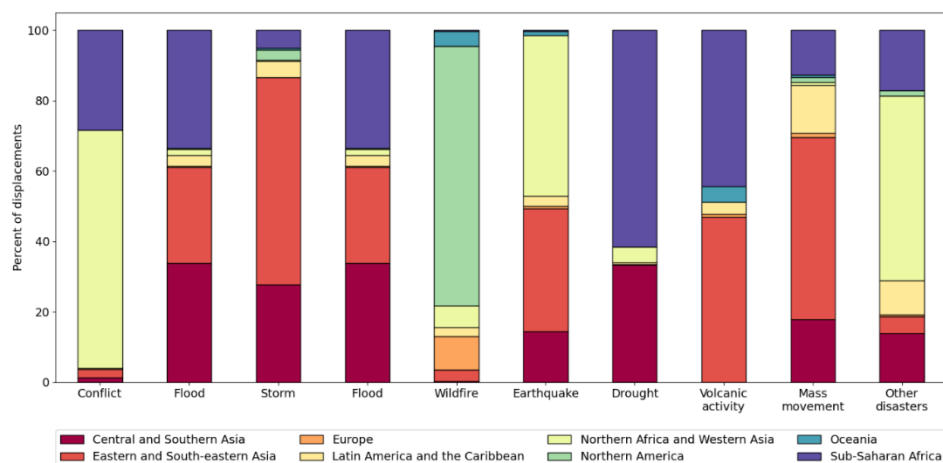
- Fiala, N., 2015. Economic Consequences of Forced Displacement. *J. Dev. Stud.* 51, 1275–1293. <https://doi.org/10.1080/00220388.2015.1046446>
- Fothergill, A., Peek, L.A., 2004. Poverty and disasters in the United States: A review of recent sociological findings. *Nat. Hazards* 32, 89–110.
- Ghaffar-Kucher, A., 2018. Uncertain prospects and ambiguous futures: the challenges & opportunities of educating the forcibly displaced.
- Gururaja, S., 2000. Gender dimensions of displacement. *Forced Migr. Rev.* 9, 13–16.
- Hallegatte, S., Vogt-Schilb, A., Rozenberg, J., Bangalore, M., Beaudet, C., 2020. From poverty to disaster and back: A review of the literature. *Econ. Disasters Clim. Change* 4, 223–247.
- Heslin, A., Thalheimer, L., 2020. The picture from above: Using satellite imagery to overcome methodological challenges in studying environmental displacement. *Oxf. Monit. Forced Migr.* 8.
- IDMC, 2024a. Global Report on Internal Displacement 2024.
- IDMC, 2024b. Geolocated internal displacement data (unpublished).
- IDMC, 2018. UnSettlement: Urban displacement in the 21st century.
- IDMC, 2014. On the margin: Kenya's pastoralists.
- IOM, 2025. Displacement Tracking Matrix, Datasets.
- Ivanova, O., Rai, M., Kemigisha, E., 2018. A systematic review of sexual and reproductive health knowledge, experiences and access to services among refugee, migrant and displaced girls and young women in Africa. *Int. J. Environ. Res. Public. Health* 15, 1583.
- James, C., Devaux, M., 2017. What has driven life expectancy gains in recent decades? A cross-country analysis of OECD member states. *Health Glance*.
- Jesuthasan, J., Witte, Z., Oertelt-Prigione, S., 2019. Health-related needs and barriers for forcibly displaced women: A systematic review. *Gend. Genome* 3, 2470289719895283.
- Klein Goldewijk, K., Beusen, A., Doelman, J., Stehfest, E., 2017. Anthropogenic land use estimates for the Holocene–HYDE 3.2. *Earth Syst. Sci. Data* 9, 927–953.
- Koşar, Y.G., 2024. The Effect of Forced Migration on Mental Health in Elderly Individuals: A Struggle in the Shadow of Disasters. *J. Gazi Univ. Health Sci. Inst.* 6, 11–17. <https://doi.org/10.59124/guhes.1375507>
- Kovac, D., Efendic, A., Shapiro, J.N., 2022. Forced displacement, exposure to conflict and long-run education and income inequality. *Policy Res.*
- Kummu, M., Taka, M., Guillaume, J.H., 2018. Gridded global datasets for gross domestic product and Human Development Index over 1990–2015. *Sci. Data* 5, 1–15.
- Logie, C.H., MacKenzie, F., Malama, K., Lorimer, N., Lad, A., Zhao, M., Narasimhan, M., Fahme, S., Turan, B., Kagunda, J., 2024. Sexual and reproductive health among forcibly displaced persons in urban environments in low and middle-income countries: scoping review findings. *Reprod. Health* 21, 51.
- Masaki, T., Madson, B., 2023. Data Gaps in Microdata in the Context of Forced Displacement. *Policy Res. Work. Pap. Ser.*
- Mort, M., Walker, M., Williams, A.L., Bingley, A., 2018. Displacement: Critical insights from flood-affected children. *Health Place* 52, 148–154. <https://doi.org/10.1016/j.healthplace.2018.05.006>
- Mucherera, B., Spiegel, S., 2022. Forced displacement: critical lessons in the protracted aftermath of a flood disaster. *GeoJournal* 87, 3855–3875.
- Ngo, E.B., 2001. When Disasters and Age Collide: Reviewing Vulnerability of the Elderly. *Nat. Hazards Rev.* 2, 80–89. [https://doi.org/10.1061/\(ASCE\)1527-6988\(2001\)2:2\(80\)](https://doi.org/10.1061/(ASCE)1527-6988(2001)2:2(80))
- Pantuliano, S., Metcalfe, V., Haysom, S., Davey, E., 2012. Urban vulnerability and displacement: a review of current issues. *Disasters* 36, S1–S22.
- Pape, U., Verme, P., 2023. Measuring Poverty in Forced Displacement Contexts.
- Pfefferbaum, B., Jacobs, A.K., Van Horn, R.L., Houston, J.B., 2016. Effects of Displacement in Children Exposed to Disasters. *Curr. Psychiatry Rep.* 18, 71. <https://doi.org/10.1007/s11920-016-0714-1>

- Rohwerder, B., 2016. Women and girls in forced and protracted displacement. *Gov. Soc. Dev. Resour. Cent.*
- Ruiz, I., Vargas-Silva, C., 2013. The Economics of Forced Migration. *J. Dev. Stud.* 49, 772–784.
<https://doi.org/10.1080/00220388.2013.777707>
- Sarzin, Z.I., 2017. Stocktaking of global forced displacement data. *World Bank Policy Res. Work. Pap.*
- Shortall, C., Ziska, C., Bedoui, R., Chapeleau, S., 2021. Health Needs Assessments in the Context of Forced Displacement, in: *Handbook of Refugee Health*. CRC Press, pp. 69–88.
- Thomas, S.L., Thomas, S.D., 2004. Displacement and health. *Br. Med. Bull.* 69, 115–127.
- Vestby, J., Schutte, S., Tollefsen, A.F., Buhaug, H., 2024. Societal determinants of flood-induced displacement. *Proc. Natl. Acad. Sci.* 121, e2206188120.
- Virgincar, A., Doherty, S., Siriwardhana, C., 2016. The impact of forced migration on the mental health of the elderly: a scoping review. *Int. Psychogeriatr.* 28, 889–896.
<https://doi.org/10.1017/S1041610216000193>
- Weiss, T.G., Korn, D.A., 2006. *Internal displacement: Conceptualization and its consequences*. Routledge.
- Wilson, R., zu Erbach-Schoenberg, E., Albert, M., Power, D., Tudge, S., Gonzalez, M., Guthrie, S., Chamberlain, H., Brooks, C., Hughes, C., 2016. Rapid and near real-time assessments of population displacement using mobile phone data following disasters: The 2015 Nepal earthquake. *PLoS Curr.* 8.
- Wirtz, A.L., Pham, K., Glass, N., Loochkartt, S., Kidane, T., Cuspoca, D., Rubenstein, L.S., Singh, S., Vu, A., 2014. Gender-based violence in conflict and displacement: qualitative findings from displaced women in Colombia. *Confl. Health* 8, 1–14.
- World Population Hub, n.d. *Global High Resolution Population Denominators Project*.
- Wu, L., Chikaraishi, M., Nguyen, H.T., Fujiwara, A., 2021. Analysis of post-disaster population movement by using mobile spatial statistics. *Int. J. Disaster Risk Reduct.* 54, 102047.
- Zetter, R., 2014. Reframing displacement crises as development opportunities. *Policy Brief Prep. Glob. Initiat. Solut. Cph. Roundtable* 2–3.
- Zilic, I., 2018. Effect of forced displacement on health. *J. R. Stat. Soc. Ser. A Stat. Soc.* 181, 889–906.

6. Supplementary Material

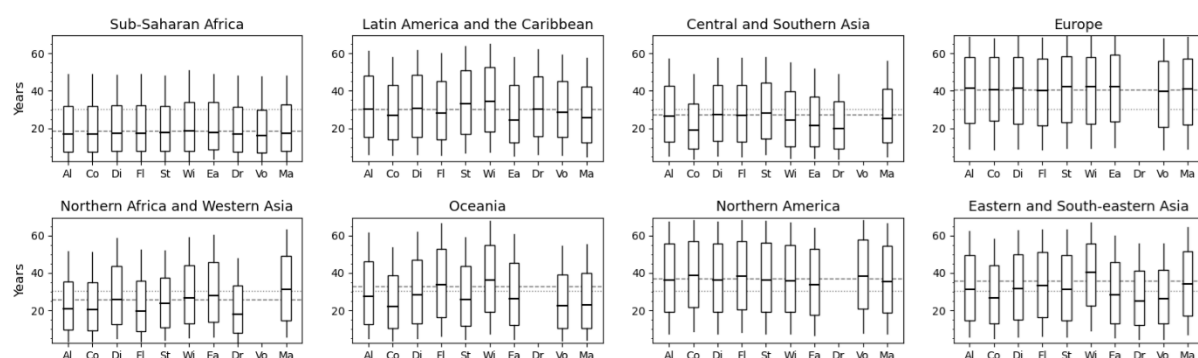


Supplementary Figure 1. IDMC (2024b) geolocated internal displacement data for 2018–2024 used in the analysis. Marker sizes represent the number of displacements, colours represent displacement causes.

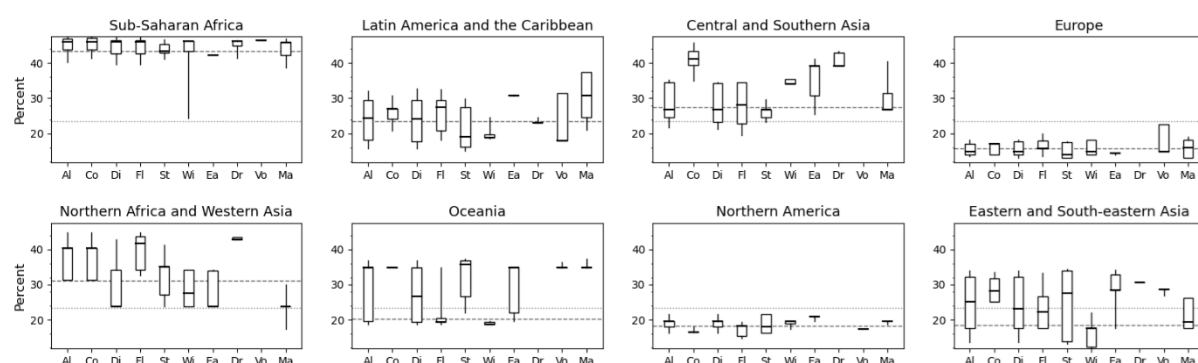


Supplementary Figure 2. Regional distribution of IDMC (2024b) geolocated internal displacements by cause.

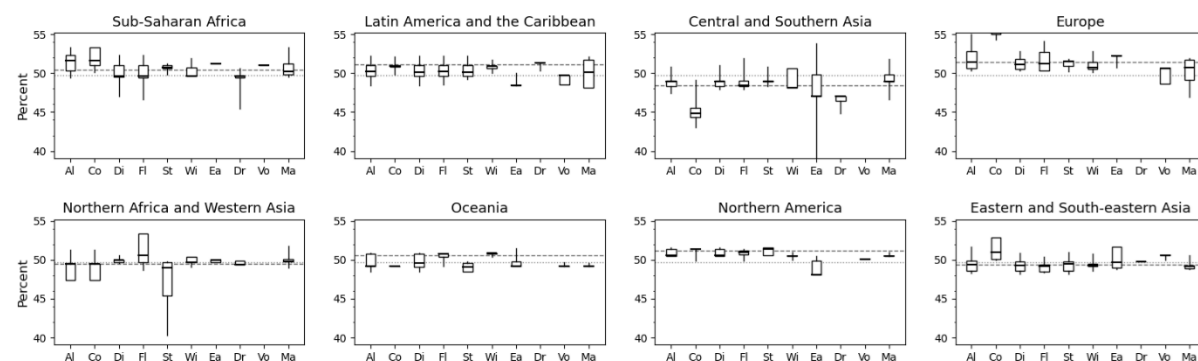
Age of populations in displacement areas



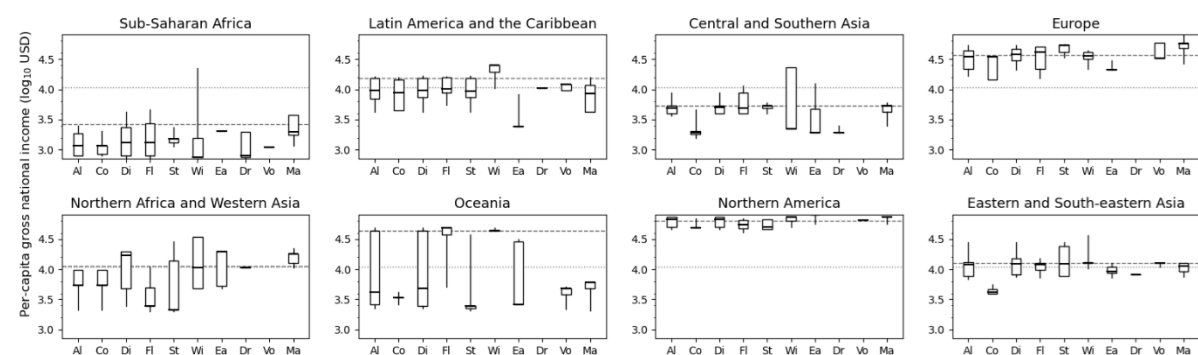
Children in displacement areas



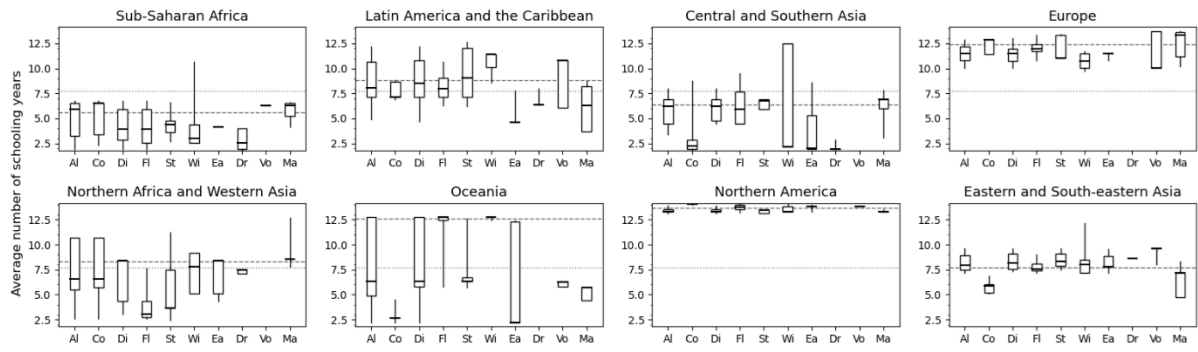
Females in displacement areas



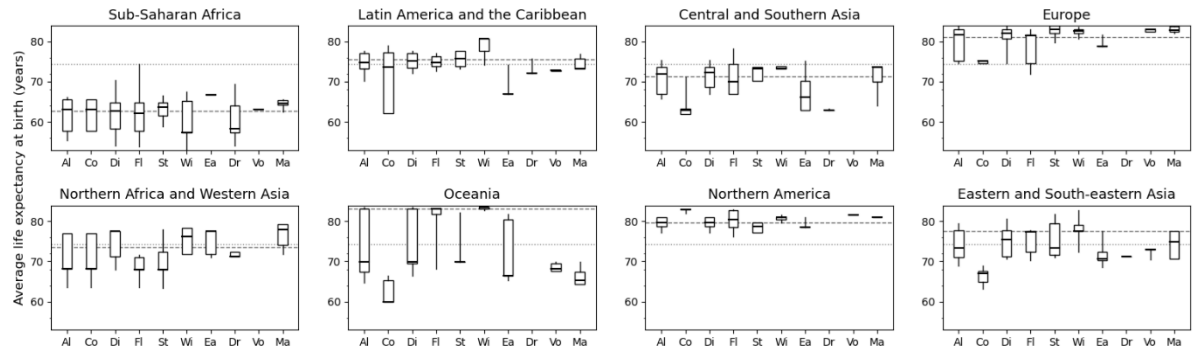
Income of populations in displacement areas



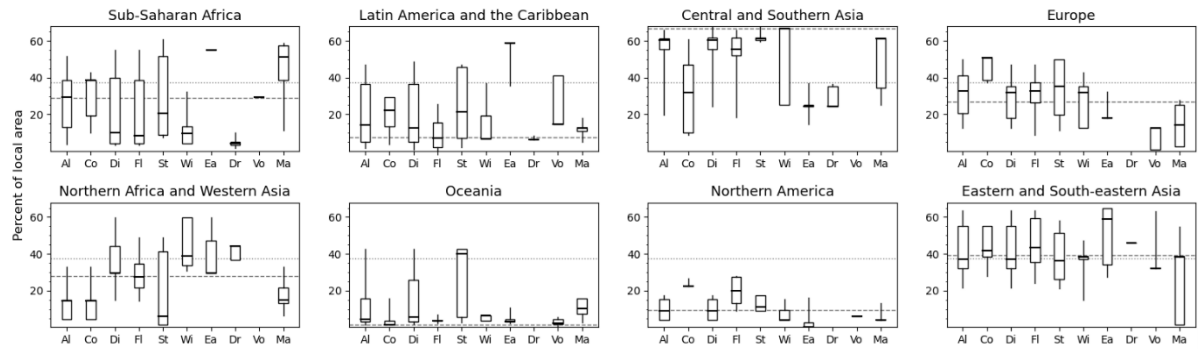
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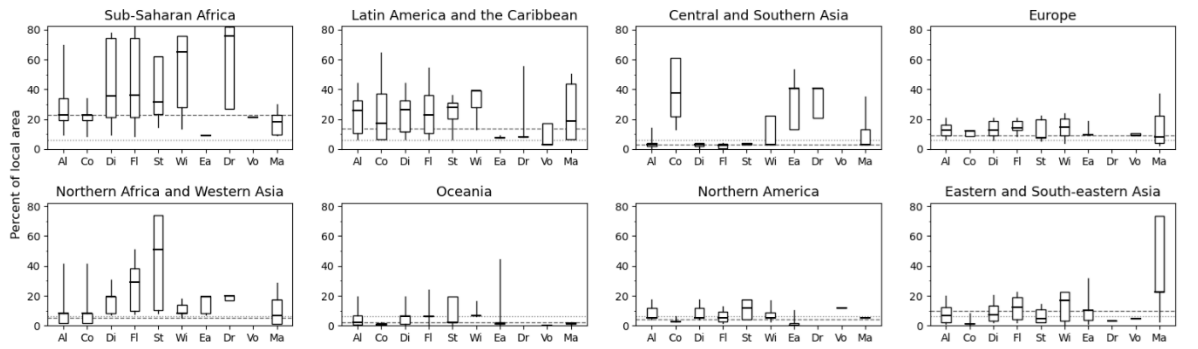
Health of populations in displacement areas



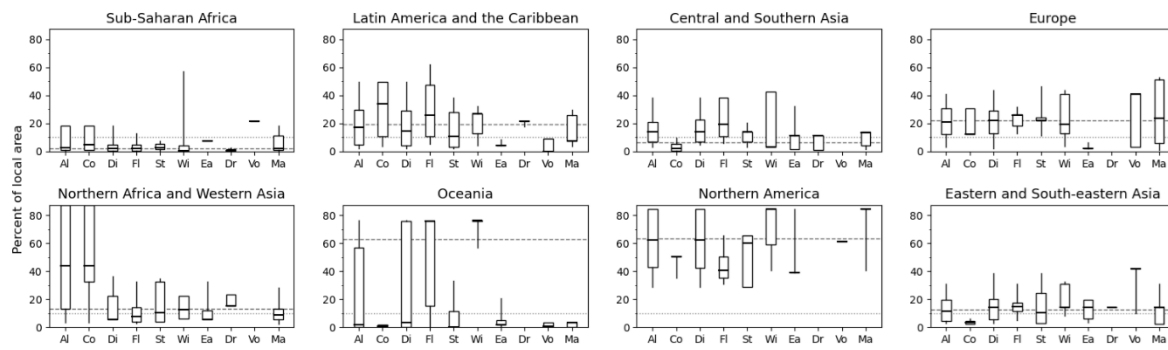
Cropland in displacement areas



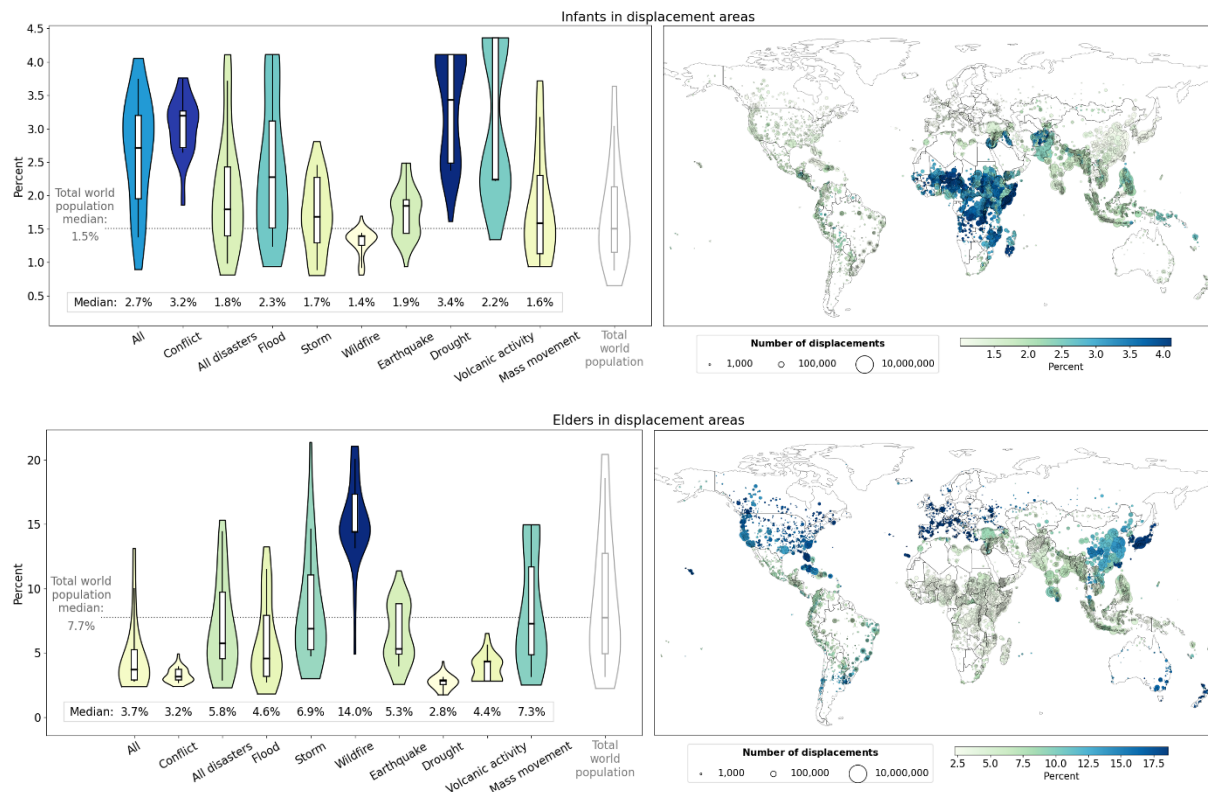
Grazing land in displacement areas



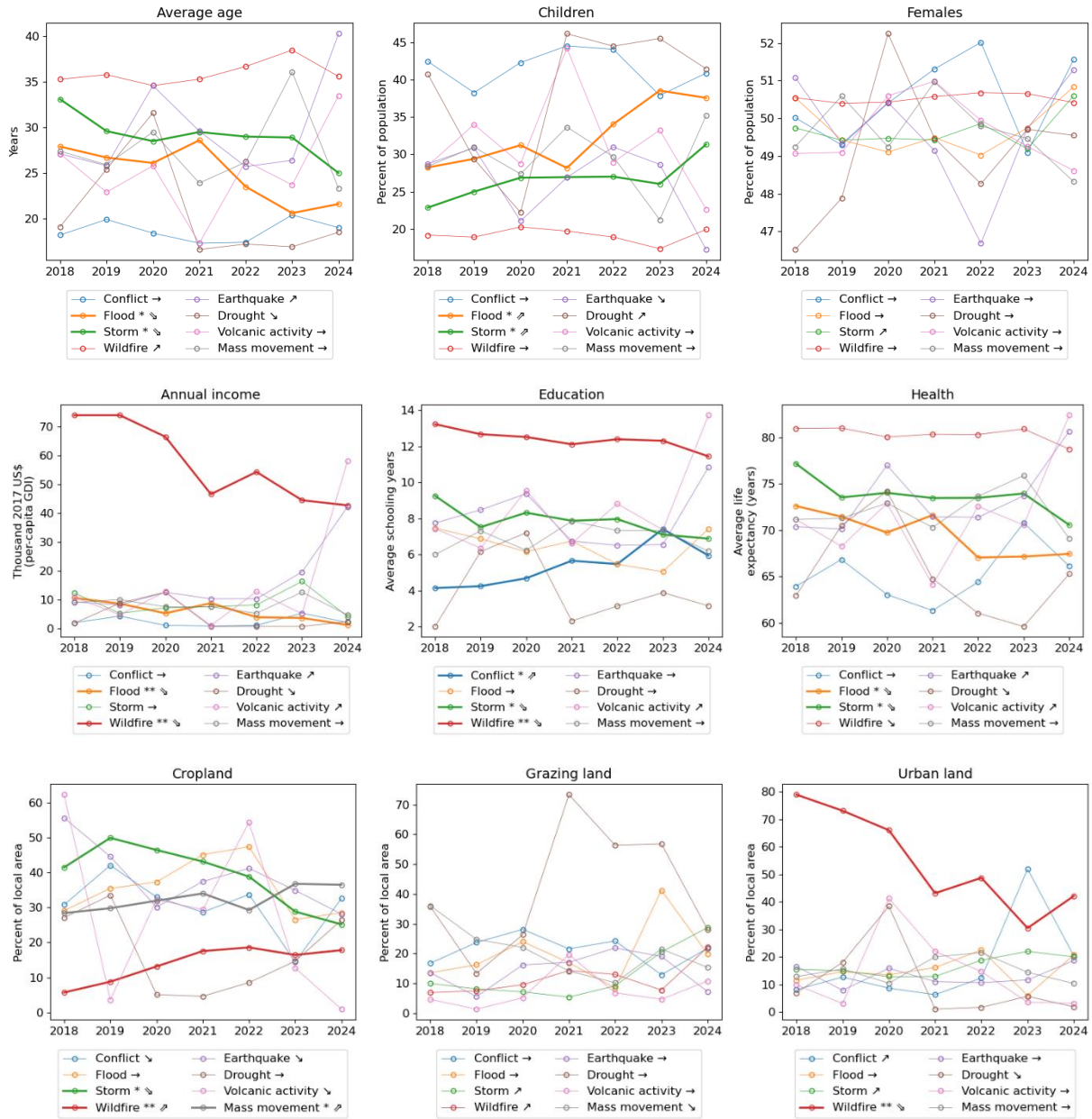
Urban land in displacement areas



Supplementary Figure 3. Distributions of demographic, socio-economic, and land use variables in locations impacted by internal displacement by world region. Boxplots are analogous to those in Figure 1, but only include events from the relevant region. X-axis ticks represent causes of displacement (AI = All causes, Co = Conflict, Di = All disasters, FI = Flood, St = Storm, Wi = Wildfire, Ea = Earthquake, Dr = Drought, Vo = Volcanic Activity, Ma = Mass movement). Dashed and dotted lines show the average age of the general population in the region and worldwide, respectively.



Supplementary Figure 4. Percentage of infants (0–1 year-olds) and older individuals (65+ years-olds) in populations in locations impacted by internal displacement. See caption of *Error! Reference source not found.* for details of the charts.



Supplementary Figure 5. Trends over time in averages of demographic variables in locations impacted by internal displacement, by detailed cause. Each line represents the annual displacements-weighted medians of the relevant variable, computed separately for each year. In the legends, '↗' ('↘') means that the positive (negative) slope coefficient in a linear regression against time, minus (plus) its standard error, is positive (negative). '↗*' and ('↘*') mean that the positive (negative) trend is statistically significant, with '*' and '**' indicating whether this is the case at the 0.05 or 0.01 level.