



2024 DINA UPDATE FOR AFRICA

ROMAINE LOUBES
ANNE-SOPHIE ROBILLIARD



TECHNICAL NOTE N°2024/07

NOVEMBER 2024



WORLD
INEQUALITY
LAB

2024 DINA Update for countries of the Africa region

Technical Note

Romaine Loubes, Anne-Sophie Robilliard

November 2024

Method

For inequality estimates in Sub-Saharan African countries, we depart from data on consumption inequality from the PIP (Poverty and Inequality Platform, World Bank).

This database comprises information from nationally representative household surveys on the distribution of consumption, a better approximation of permanent income in areas with prevalent agrarian self-employment, and, thus, a more accurate measure of income inequality. We then apply several steps to transform this measure of the distribution of consumption inequality into year-country measures of inequality in pre-tax national income.

From consumption to income profiles

Using the method described in Chancel et al. (2023), we adjust the consumption measures to transform them into income measures, based on estimates of consumption-income profiles.

From post-tax to corrected pre-tax disposable income

Survey data underrepresents the income of high earners, and presents estimates of income net of tax. In order to adjust for these two facts, we use information from countries in SSA where we have both survey and tax tabulations (Côte d'Ivoire, South Africa) and the method delineated in Blanchet, Flores and Morgan (2022) to transform survey post-tax income data into corrected pre-tax estimates.

From disposable to national income

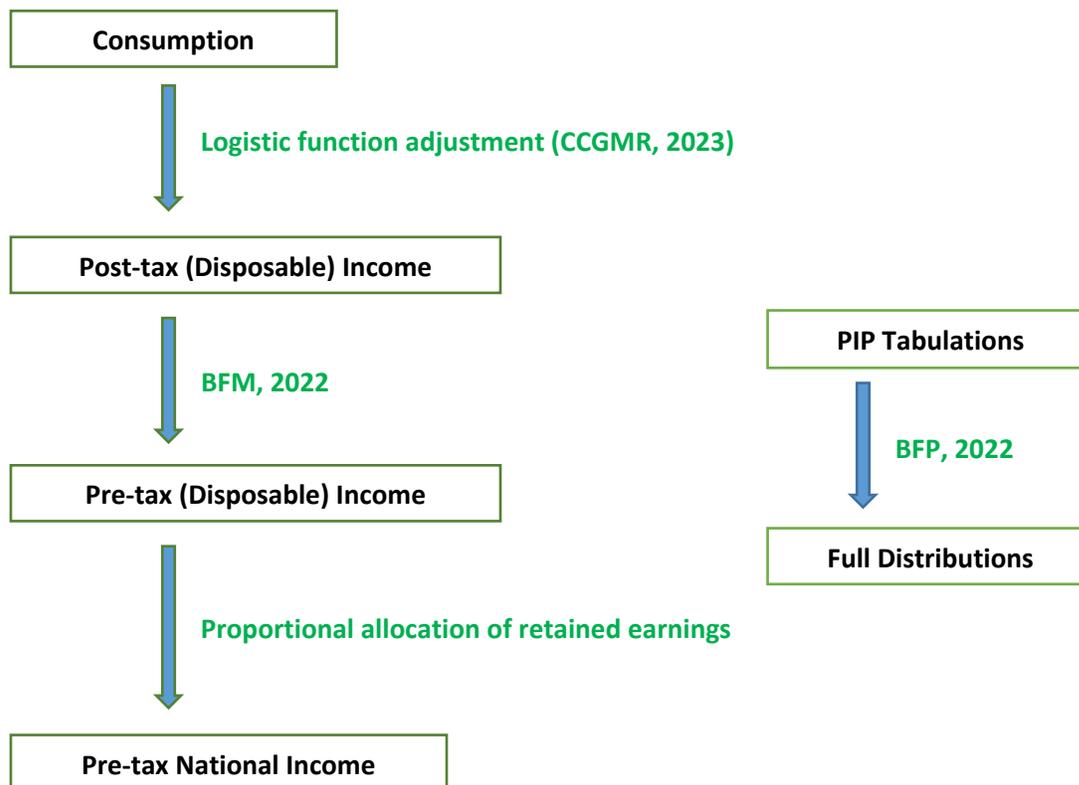
Then, we take into account several additional components of national income, notably capital income (including taxes on production and retained earnings). We lack this data in Africa and thus adjust following a conservative hypothesis, distributing the remaining part of national income in proportion of individual income at equal rates across the population.

From tabulations to full distribution

Finally, in order to transform these tabulations at the infra-percentile level to the full distribution, we apply a non-parametric method that produces smooth and realistic generalized Pareto curves (Blanchet, Fournier and Piketty, 2022)

Fig. 1 delineates this methodology for the countries where we use PIP.

Figure 1 : From PIP to DINA



PIP replaced Povcalnet in spring 2022. The changes are described in World Bank, 2022 and the newest update in World Bank, 2024. Fig. 2 in the Appendix provides the most recent datapoints for each country, as well as the additions relative to the previous DINA. An important point we want to highlight is that the estimate for Somalia was dropped in later versions. For this country, as well as other ones for which data is missing, we follow the standard WIL procedure and impute the distribution of national income from the distribution in other countries from the subregion:

- Eritrea <= Ethiopian inequality
- Equatorial Guinea <= Middle Africa inequality
- Western Sahara <= Mauritania inequality.
- Somalia <= Eastern African inequality

Outlook

We are currently working toward integrating recent work using harmonized household survey data on 8 West African countries (Robilliard, 2023), and efforts to secure fiscal data and integrate it into the WID are underway in Senegal, Rwanda and Uganda.

References

Blanchet, T., Flores, I., & Morgan, M. (2022). The weight of the rich: improving surveys using tax data. *The Journal of Economic Inequality*, 20(1), 119-150.

Blanchet, T., Fournier, J., & Piketty, T. (2022). Generalized Pareto curves: theory and applications. *Review of Income and Wealth*, 68(1), 263-288.

Castaneda Aguilar, R. Andres, et al. (2024). March 2024 Update to the Poverty and Inequality Platform (PIP). Global Poverty Monitoring Technical Note Washington, D.C.: World Bank Group.

Chancel, L., Cogneau, D., Gethin, A., Myczkowski, A., & Robilliard, A. S. (2023). Income inequality in Africa, 1990–2019: Measurement, patterns, determinants. *World Development*, 163, 106162.

Robilliard, A.-S. (2023) Inequality, Education, and Gender in 8 West African countries, World Inequality Lab, DINA WAEMU Report 09/2023.

1. Most recent data points for all countries in Sub-Saharan Africa

Country	Last year available	Country	Last year available
Angola	2018	Madagascar	2012
Benin	2021	Malawi	2019
Botswana	2015	Mali	2021
Burkina Faso	2021	Mauritania	2019
Burundi	2020	Mauritius	2017
Cameroon	2021	Mozambique	2019
Cape Verde	2015	Namibia	2015
Central African Republic	2021	Niger	2021
Chad	2022	Nigeria	2018
Comoros	2014	Rwanda	2016
Congo	2011	Sao Tome et Principe	2017
Cote d'Ivoire	2021	Senegal	2021
Democratic Republic of Congo	2020	Seychelles	2018
Djibouti	2017	Sierra Leone	2018
Eritrea	NSDA	Somalia	NSDA
Ethiopia	2015	South Africa	2014
Equatorial Guinea	NSDA	South Sudan	2016
Gabon	2017	Sudan	2014
Gambia	2020	Swaziland	2016
Ghana	2016	Tanzania	2017
Guinea	2018	Togo	2021
Guinea-Bissau	2021	Tunisia	2021
Kenya	2021	Uganda	2019
Lesotho	2017	Western Sahara	NSDA
Liberia	2016	Zambia	2022
		Zimbabwe	2017

Note: Bold indicates a new point compared to the previous update.