

POLICY BRIEF:

RESEARCH & LEARNING



Primary School Pupil Teacher Ratio Projections in Mainland Tanzania

The pupil-teacher ratio (PTR) is a key metric in education planning that represents the average number of pupils per each teacher. It can enable understanding about average class sizes and the number of teachers available, but does not indicate maximum class size. It provides crucial information for policymaking in two ways:

1. **Budget management:** teachers account for 70% of education spending in Tanzania, making their numbers a critical part of effective resource allocation.
2. **Quality of education:** smaller class sizes improve learning outcomes, so understanding current and future teacher needs is essential.

According to the Annual School Census for government schools in mainland Tanzania, the national PTR in government primary schools in 2022 was 63. This is above the government's target of 60 and the international standard of 40. The former is outlined in Tanzania's 'Pre-Primary and Primary Teacher Deployment Strategy', which states that class sizes over 60 hinder effective teaching and quality learning.

Despite declining fertility rates over the past 14 years, Tanzania's population is projected to reach between 120–141 million by 2050, with a 3% annual growth rate. This rapid population growth alongside fee-free education will significantly increase demand for education services resulting in an expected increase in the national PTR over the next decade. However, the national number masks important regional variations and detailed projections are needed to help the Government of Tanzania prioritize resources and address disparities.

This Policy Brief examines the PTR at the council level in government primary schools in 2022 and forecasts its trajectory through 2023 under different teacher hiring and allocation scenarios, offering insights for targeted policy interventions.

It is based on the Technical Note "Primary School Pupil Teacher Ratio Projections in Mainland Tanzania"¹ and contributes to a key Shule Bora programme outcome: "Quality and effectiveness of teaching and learning improved."

¹ Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099400505072539742>

Summary of findings

1. **Large regional disparities exist** – some councils have surplus teachers, others have severe shortages.
2. **Rapid population growth will strain even well-staffed councils** – hiring at double the retirement rate will leave 55% of councils above the 60 PTR target.
3. **Strategic teacher hiring and allocation are essential** – a robust strategy is needed to ensure a PTR of 60 in all councils by 2032.
4. **Progress has been made** – between 2022-2024, targeted hiring efforts reduced the PTR to 55 in government schools.

Key findings

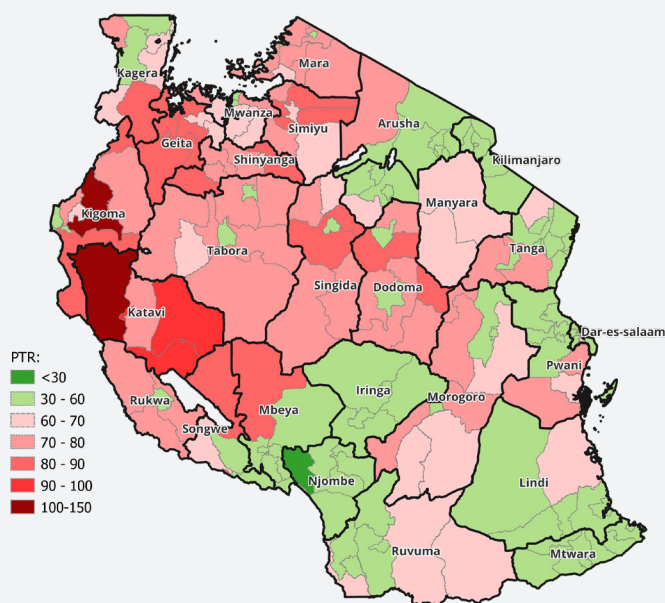
Significant regional disparities

PTR disparities across councils are significant, as shown in Map 1.

In 2022, 47% of councils had fewer than 60 students per teacher, while two councils had a PTR of over 100. The councils with the six highest PTRs in 2022 were all located in either Katavi or Kigoma, with the Kasulu council having the highest PTR of 103 students per teacher. The council with the lowest PTR in Tanzania in 2022 was Makete (Njombe region) with just 29 students per teacher on average.

When forecasting, it is important to understand these regional differences to understand not only hiring needs, but also the impact of reallocation. In 2022, achieving a PTR of 60 required hiring 7,932 additional teachers while reallocating teachers from regions like Kilimanjaro and Arusha. Without reallocation, 21,827 new hires were necessary. Full flexibility in reallocation could reduce hiring needs by two-thirds. (see, 3. Geographic teacher reallocation).

Map 1. Council-level PTR in Tanzania, 2022

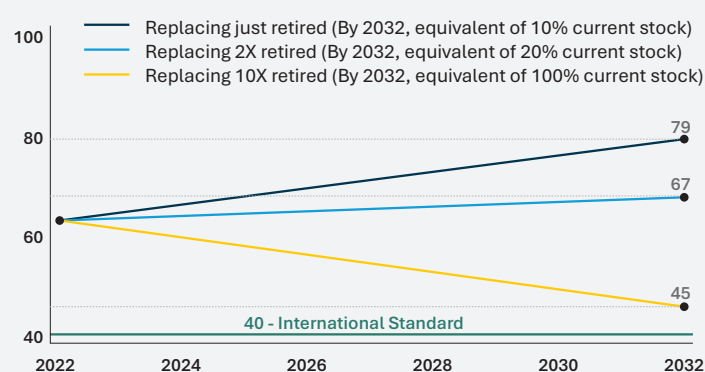


Sources: BEST 2022. Enrollment projections based on 2021 and 2022 population censuses.

Replacing retired teachers is not enough to meet government goals

By 2032, demand for primary education will grow. Projections show that Tanzania's PTR will continue to rise unless teacher hiring increases beyond replacing retiring teachers. As shown in Figure 2, if only retiring teachers are replaced, the national PTR would rise to 79 by 2032. To reach a PTR of 45 by 2032, forecasting suggests that 10 teachers need to be hired for each retiring teacher. Achieving a PTR of 60, the government's goal, will require 73,355 additional teachers by 2032.

Figure 2. PTR Projections based on different hiring scenarios



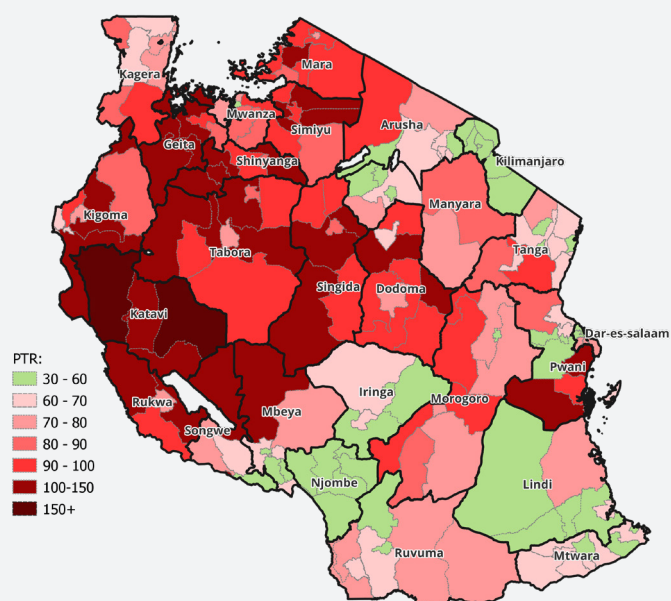
Sources: BEST 2022. Enrollment projections based on 2021 and 2022 population censuses.

Note: Assuming teachers leaving the system are those that reach the retirement age of 60 (Not accounting for other teachers that leave early)

Given the disparities in PTR across councils and differing population growth rates, the PTR in 2032 is expected to vary by region. Maps 2 and 3 show the projected PTR in 2032 based on different teacher hiring scenarios. Even with the conservative estimates used for population growth, hiring twice the number of teachers retiring until 2032 will still leave many councils with teacher shortages.

Under the 'replacing just retired' scenario, 23% of councils (43) would have a PTR of 60 or below; 58% of councils (106) have a 60-100 PTR; and 19% of councils (35) have a PTR exceeding 100. Hiring double the number of retired teachers almost doubles the number of councils with 60 PTR (or below) but doesn't eliminate shortages.

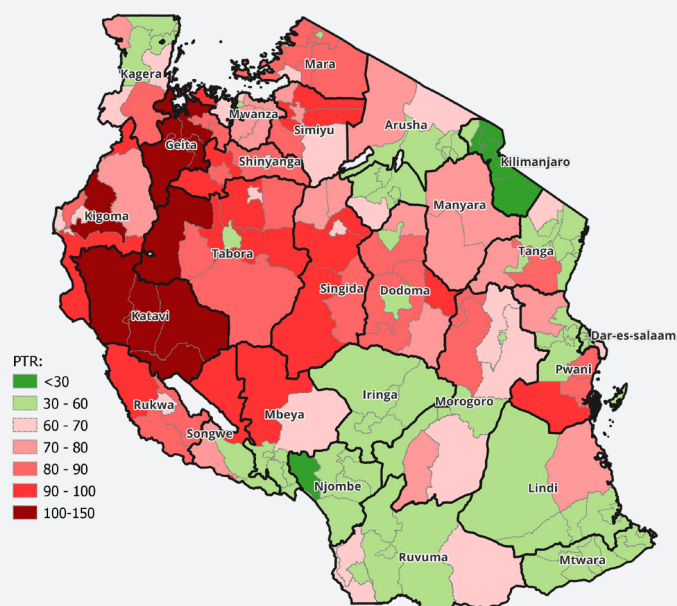
Map 2. Projected PTR by council in 2032 if retiring teachers are replaced in the next 10 years



Sources: BEST 2022. Enrollment projections based on 2021 and 2022 population censuses.

Note: Assuming teachers leaving the system are those that reach the retirement age of 60 (Not accounting for other teachers that leave early)

Map 3. The PTR by council in 2032 if we replace double the number of teachers that are retiring in the next 10 years

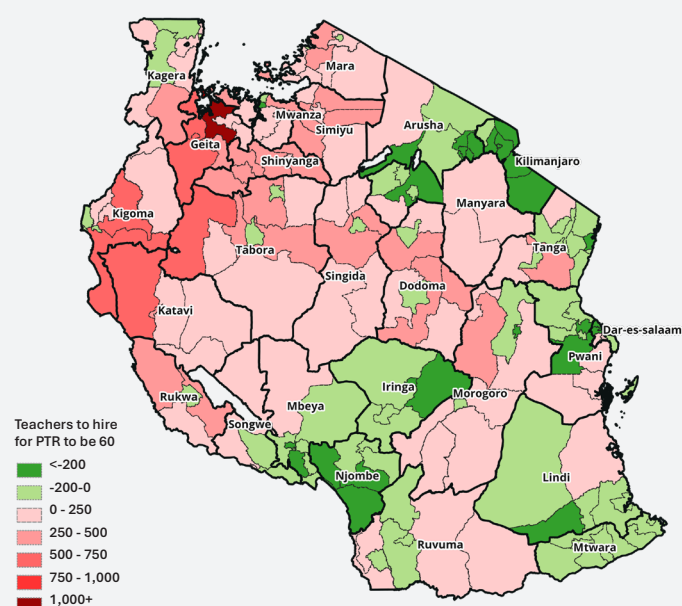


Sources: BEST 2022. Enrollment projections based on 2021 and 2022 population censuses.

Geographic teacher reallocation could help balance disparities

At least some regional and council disparities could be addressed by reallocating teachers from councils with low PTRs to those with high PTRs in the short term. Map 4 shows that while some councils require many more teachers to meet the 60 PTR target, other councils have more than the amount needed to achieve the target. For example, in 2022 the Geita council needed 1,288 more teachers to achieve a PTR of 60, while Morogoro MC had 842 surplus teachers in 2022.

Map 4. Number of teachers to hire in 2022 for PTR to be 60 in each council

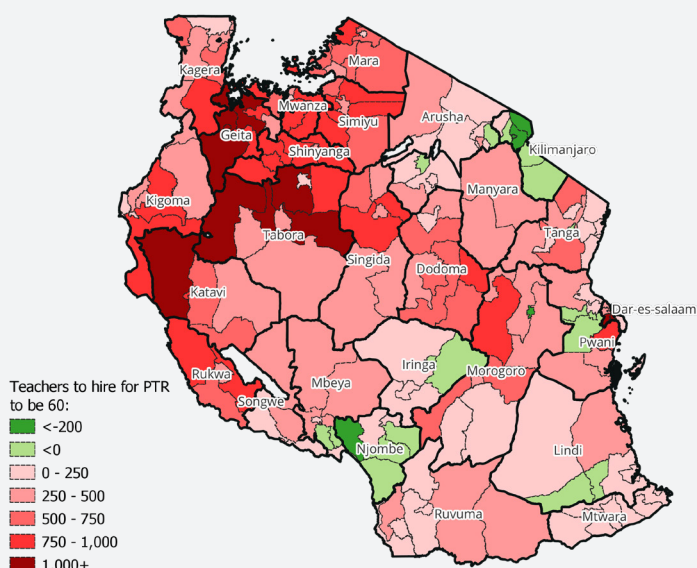


Source: BEST 2022 Statistics

Major hiring is required to achieve a PTR of 60 by 2032

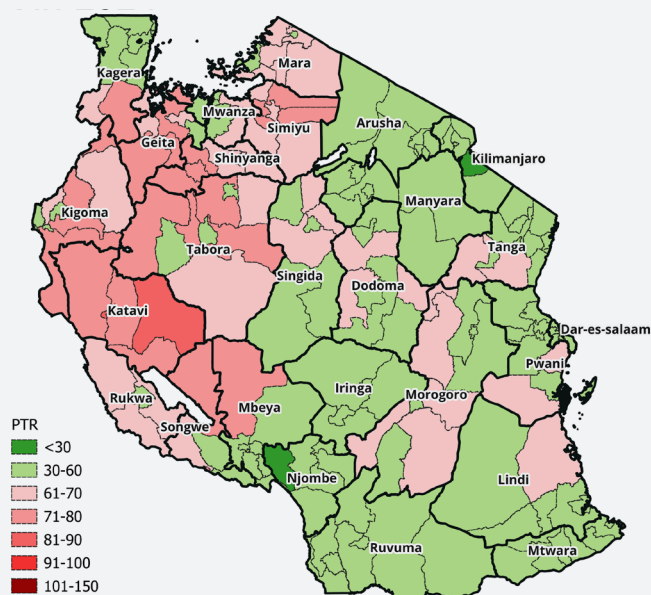
Meeting the temporary government's goal of a PTR of 60 by 2032 across all regions will require substantial teacher recruitment. Map 5 shows how the number of teachers needed per council to reach a PTR of 60 will change in 2032. Due to rapid population increase and migration to urban areas, very few councils will have sufficient teachers to reach a PTR of 60, and some councils that currently have a surplus of teachers are expected to have large deficits in 2032. For example, Kinondoni MC had a surplus of 323 teachers in 2022 but is projected to require 299 more teachers to maintain a PTR of 60 in 2032. To achieve the targeted PTR in every council, 73,355 additional teachers need to be hired alongside teacher reallocation. Without reallocation, 75,978 teachers would need to be hired.

Map 5. Number of teachers to hire in 2032 for PTR to be 60 in each council



Source: BEST 2022 Statistics & enrolment projections done using 2012 & 2022 population censuses

Map 6. Council-level PTR in Tanzania, 2024



Source: BEST 2022 Statistics & enrolment projections done using 2012 & 2022 population censuses

Progress has been shown in 2024

Significant progress was made in reducing the PTR in government schools in 2024, primarily due to an increase in teacher recruitment. As shown in Map 6, the national PTR decreased to 55, marking a notable improvement from 63 in 2022. However, despite this progress, disparities remain, with some councils still experiencing PTRs well above the government's target of 60.



Conclusion

Despite progress in reducing the PTR between 2022 and 2024, there are large regional disparities in PTR across councils. Some councils currently have a surplus of teachers while others demonstrate large deficits relative to achieving a PTR of 60. Rapid population growth is expected to greatly affect all councils, including those with a lower PTR. Even if the government hires twice the number of teachers retiring by 2032, that will still leave 55% of councils with a PTR above 60.

A robust and sustained teacher recruitment and allocation strategy will be needed to ensure a PTR of 60 in all councils by 2032. Given constraints faced by the Government of Tanzania, improved geographic allocation rules could help optimise existing resources and complement hiring efforts.

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Shule Bora is a UK International Development funded programme led by the Tanzanian government. It is implemented in nine regions of Tanzania by an association led by Cambridge Education in partnership with ADD International, International Rescue Committee (IRC) and Plan International.

For more details visit www.camb-ed.com or contact us by email on CETanzania@camb-ed.com, or by telephone on +255 759 957880

