Papua New Guinea National Census 2011: Rates of Population Change in Local Level Government Areas

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In January 2014, the Papua New Guinea (PNG) National Statistical Office (NSO) published the results of the 2011 national census (NSO 2014b). Preliminary results were published in November 2013. This *In Brief* investigates the quality of the 2011 census by looking at the rates of population change between the 2000 and 2011 censuses in local level government areas (LLGAs). The 2011 census is presently available only at this level.

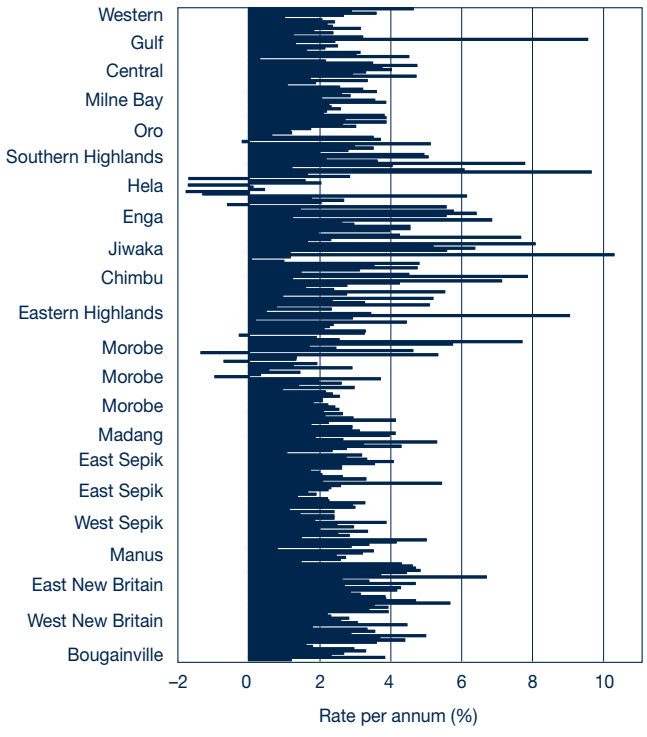
The Final Figures (NSO 2014b) lists the total population of PNG in July 2011 as 7,257,324, an increase of 2,084,538 persons since the previous census in 2000, a growth rate of 2.9 per cent per annum (% pa) between 2000 and 2011. The Islands Region had the highest growth rate (3.7% pa), followed by Highlands (3.4% pa), Southern (3.0% pa) and Momase (2.4% pa). If these rates are real and they are sustained, the Islands population will double in 19 years, the Momase population in 29 years and the PNG population in 25 years. The HIV/AIDS epidemic may slow these growth rates by reducing the number of child-bearing women and fertility in general, but it is not predicted to cause a reduction in the total population (Kaldor et al. 2006).

Both the preliminary and final reports contain what are probably typographical errors. In the Preliminary Figures table of population growth rates by provinces between 1980 and 2011 (NSO 2014a:8)[1] the 2000 population of National Capital District (NCD) is listed as 154,158, but in the same table in the Final Figures (Table 2) it is listed as 254,158. In the Final Figures in Table 2 (page 9), in the columns displaying rates of change between censuses from 1980 to 2011, a number of rows have been misplaced so that Chimbu and Eastern Highlands figures are listed as 'not available' when it is Hela and Jiwaka that are not available because they did not exist until 2012 and the rates for a number of provinces are wrong because their figures have been displaced by two rows. In Table 12 (Morobe Province), the Finschafen (sic) Urban LLGA female population is listed as 557 but males as 6920 and the total population as 1224.

The Final Figures lists populations for 300 Rural LLGAs and 26 Urban LLGAs and NCD for 2000 and 2011. Rates of change were calculated using an exponential expression. If field counts were reasonably accurate and unless there are other explanations, national-level patterns of population change should be discernable (Figure 1).

The rates of change of Rural LLGAs range from –1.76% pa (i.e. a decrease in population) to 10.29% pa, a biologically impossible rate which can only be explained by high levels of in-migration. The lowest rates of change were recorded in three adjacent Koroba-Kopiago District LLGAs and the highest was Nondugl Rural LLGA in Jiwaka, which for many years has been an area of out-migration. Sixty-five LLGAs have rates of more than 4% pa, 20 of them between 5% pa and 7% pa, nine between 7% pa and 10% pa. It is most unlikely these rates are real and they are probably the outcome of errors in counting, in data management, or as a result of the splitting of LLGAs.[2] Five of Jiwaka's six LLGAs are in the 4th quartile (the top 25%) of rates of change in PNG and there is no reasonable explanation why.[3] On the other hand, in the other new province of Hela, rates are well below PNG's average, despite the PNG LNG project and Tari Urban LLGA having the highest rate of growth of any

Figure 1: Population change 2000–2011 by LLGA, Papua New Guinea

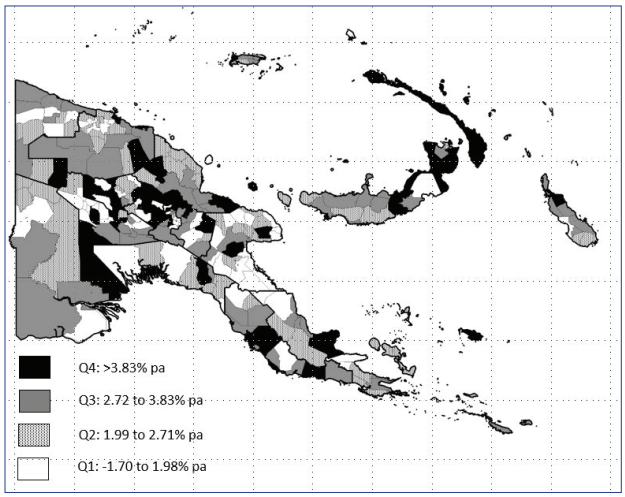


Source: NSO 2014b

urban area in PNG. Nine of Hela's 11 LLGAs are in the 1st quartile (the bottom 25%) of rates of change. In addition to Jiwaka, Enga, Western Highlands, Chimbu and Eastern Highlands all have LLGAs with very high relative growth rates. Conversely, 24 of Morobe Province's 30 LLGAs are below the median growth rate and 15 are in the 1st quartile. It is difficult to explain these outcomes.

While considerable variation exists within provinces in the distribution of such things as poverty (Allen et al. 2005), 'disadvantage' (Hanson et al. 2001) and infant and child mortality (Bauze et al. 2012), a broad and reasonably stable national pattern can be discerned. The pattern is one in which poverty and the other attributes are worst across the central west of PNG along the Indonesian border, east along the northern and southern sides of the highlands, continuing down the central mountain range to Milne Bay, and along the south coast of New Britain. But neither this pattern, nor any other, is discernible if the LLGA rates of change between 2000 and 2011 are mapped (Figure 2).

Figure 2: Rates of population change 2000 to 2011 by Rural LLGAs, as quartiles of all Rural LLGAs, Papua New Guinea (urban LLGAs excluded)



Source: NSO 2014b

Conclusion

The recently published 2011 PNG national census results contain some inexplicable rates of population change at the LLGA level. Some LLGAs have lost population between the censuses while others have grown at rates that are impossible in the absence of high levels of migration. Some of these outcomes may have particular explanations, but many appear to be the outcome of the quality of field counting or data management, either in 2000 or in 2011.

How can the census results be used with these questions hanging over them? First, the NSO should release the census unit (village) level results so the sources of the rapid growth or loss of populations can be identified more accurately. Second, no description of how the census was carried out is available; the NSO should issue a report on how the census was done, who did the field counting and how the field counts were managed. Third, the splits in some LLGAs should be detailed so the 2000 census can be easily linked to the 2011 census. In the meantime, figures from LLGAs with large relative increases and decreases and no obvious explanations for them should be used with care.

Author Notes

Bryant Allen is a visiting fellow with SSGM.

Endnotes

1 Tables in the Preliminary Figures are not numbered but the pages are.

2 In 2012 two new provinces were created in PNG, Jiwaka out of Western Highlands and Hela out of Southern Highlands. In these new provinces and in a number of other mainly highland provinces, some LLGAs listed in 2000 have been split, renamed and renumbered. The 2011 census report contains no information on how they were split nor which LLGAs were split.

3 John Burton, personal communication, 10 August 2014.

References

Allen, B., R.M. Bourke and J. Gibson 2005. Poor Rural Places in Papua New Guinea. *Pacific Viewpoint* 46(2):201–18.

Bauze A.E., L.N. Tran, K.-H. Nguyen, S. Firth, E. Jimenez-Soto, L. Dwyer-Lindgren, A. Hodge and A.D. Lopez 2012. Equity and Geography: The Case of Child Mortality in Papua New Guinea. *PLoS ONE* 7(5): e37861. doi:10.1371/journal.pone.0037861.

Hanson, L.W., B.J. Allen, R.M. Bourke and T. McCarthy 2001. *Papua New Guinea Rural Development Handbook*. Canberra: The Australian National University.

Kaldor, J., H. Worth, K. Henderson, M. Law, J. McKay, B. Warner and K. Razali 2006. *Impacts of HIV/AIDS 2005–2025 in Papua New Guinea, Indonesia and East Timor*. Canberra: AusAID.

NSO (National Statistical Office) 2014a. *Preliminary Figures Papua New Guinea Census 2011*. Waigani: NSO.

NSO (National Statistical Office) 2014b. *Final Figures Papua New Guinea National Population and Housing Census 2011*. Waigani: NSO.

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