
ANKER LIVING INCOME REFERENCE VALUE

RURAL PAPUA NEW GUINEA 2020



LIVING INCOME

PGK 1,593
PER MONTH
(US\$460)

Anker 
Research
Network

GLOBAL 
LIVING WAGE
COALITION

The Anker Reference Values are endorsed by the Global Living Wage Coalition (Fairtrade International, Rainforest Alliance, Social Accountability International and ISEAL Alliance). Development of the methodology was initiated and supported by Fairtrade International and German Federal Ministry for Economic Cooperation and Development (BMZ). Further support was received from Rainforest Alliance, Social Accountability International and Clif Bar & Company.



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Anker Living Income Reference Value¹

Rural Papua New Guinea 2020

1. Anker Living Income Reference Value for Papua New Guinea in 2020

The Anker Living Income Reference Value for 2020 for rural Papua New Guinea (PNG) is PGK 1,593 (USD 460)² per month with a 95% confidence around it from PGK 1,432 (USD 414) to PGK 1,773 (USD 512). This is the net income required for typical rural households to be able to afford a basic but decent living standard in a typical rural area of Papua New Guinea.

*“A living income is the net annual income required for a household in a particular place to afford a decent standard of living for all members of that household.”
(Living Income Community of Practice)*

2. Anker Reference Value Methodology

Anker Living Income Reference Values are based on a new methodology developed by Richard Anker, Martha Anker, and Ian Prates. This methodology is based on a rigorous statistical analysis of 40 internationally comparable, quality-assured Anker methodology studies that cover low-income and middle-income countries. It was developed primarily under the auspices of the Global Living Wage Coalition.

Anker Reference Values are internationally comparable, consistent with results from existing Anker living wage and living income benchmark studies and easy to update. Thus, they are of special value to countries where a full quality-assured Anker methodology LW or living income study has yet to be conducted.

Anker Living Wage and Living Income Reference Values represent a living income for typical families in rural (or urban) areas of low-income and middle-income countries. Since they are based on a statistical analysis, they have a margin of error for typical rural (or urban) areas of a country, which is generally around +/- 10%, using a 95% confidence interval. Since Reference Values are not location-specific within countries and represent the situation in typical rural (or urban) areas, the margin of error may be larger for locations with atypical living costs within a country such as large cities with high living costs, or poorer (richer) areas with relatively low (high) living costs and norms.

¹ Prepared by: Fabricio Bonilla and Koen Voorend with Richard Anker, Martha Anker, and Ian Prates

² Exchange rate used to convert to US dollars is 3.46 PGK which is for the average exchange rate for the January-November 2020 period according to IMF data.

3. Country Context

Geography and demographics

Papua New Guinea, in the southwestern Pacific, is the third largest island nation in the world, with a total area of 462,840 square kilometers (178,700 sq-mi).³ Composed of over 600 islands, the country has 5,152 km (3200 mi) of coastline. Combined with its tropical climate and topographic diversity, the country hosts an enormous diversity of plant and animal species.⁴ Its population of 7.2 million inhabitants is similarly diverse, with an impressive display of cultures as there are at least 38 different ethnic groups, 839 languages and a complex variety of livelihoods and customs.⁵ Many languages are spoken by fewer than 1,000 persons. However, Tok Pisin, an English based creole language, is widely understood. There are two other official languages in which government business is conducted, namely Hiri Motu and English, but they are each spoken by less than 2% of the population.⁶

The country's topography has been a limiting factor for the construction of communication and transport networks, and many of the nearly 90% of the population who live in rural areas are unable to export their goods because of the poor transport system within the country.⁷ Since the end of the 1990s, a sharp increase in the urban cost of living resulted in a markedly slower urban growth, which has historically been driven by migration from rural areas because of a lack of economic opportunities in rural areas.⁸ Almost 60% of all land in Papua New Guinea has been classified as 'low' or 'very low' quality for agricultural production.⁹

Recent investments have emphasized infrastructure projects intended to connect the country's capital and biggest urban center, Port Moresby, with the surrounding regions, which host 400,000 inhabitants.¹⁰ The country's second largest city and its most important industrial and cargo port, Lae (on the North-East coast), has historically offered a gateway for agricultural production to the global market¹¹, but until now, there is no direct connection between Port Moresby and Lae.

³ CIA. (2020). Papua New Guinea. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/pp.html>

⁴ Papua New Guinea Tourism Promotion Authority. (n.d.). Papua New Guinea Overview. Papua New Guinea. Retrieved from <https://www.youtube.com/watch?v=n0amE96UjWk>

⁵ Fridriksson, G. (2018). Meet the Tribes of Papua New Guinea. Retrieved from <http://www.gudmundurfridrikssonblog.com/tribes-of-papua-new-guinea/>

⁶ CIA. (2020). Op cit.

⁷ Schmidt, E., Gilbert, R., Holtemeyer, B., & Mahrt, K. (2019). Poverty Prevalence and Correlates of Household Expenditure in Four Lowland Areas of Rural Papua New Guinea.

⁸ Schmidt et al. (2019). Op cit.

⁹ "Poor quality land is higher, steeper, has higher rainfall, floods more often, is cloudier and has less fertile soils than better quality land." Allen, B., Bourke, R. M., & Gibson, J. (2005). Poor rural places in Papua New Guinea. *Asia Pacific Viewpoint*, 46(2), 201–217. <https://doi.org/10.1111/j.1467-8373.2005.00274>.

¹⁰ ONE PNG. (2018, June 14). Port Moresby fast growing urban center in Papua New Guinea. *Urban News*. Retrieved from <https://www.onepng.com/2018/06/port-moresby-fast-growing-urban-center.html>

¹¹ Schmidt et al. (2019). Op cit.

Economy

Papua New Guinea's gross national income per capita (in current USD) grew steadily from USD 470 in 2003 to USD 2,990 in 2014 but dropped to USD 2,570 in 2018. In 2019, per capita GNI was USD 2,780.¹² Agriculture accounted for 22.1% of GDP in 2017¹³, and provided support for 85% of the population. Industry makes up 43% of GDP, while services account for 35%.¹⁴

Papua New Guinea is a resource-rich nation, with the minerals and gas sectors leading the country's extraction-based economy. The country's mineral deposits, like copper, gold and oil, make up two-thirds of export earnings.¹⁵ The country's potential for tourism, with its natural and cultural diversity, seems almost unlimited, but is strongly limited by the country's weak infrastructure.¹⁶ Palm oil, cocoa and coffee stand out as important agricultural exporting products.¹⁷

More specifically, Papua New Guinea's world-renowned cocoa production provides livelihoods for an estimated two million inhabitants, with 90% of cacao produced by village farmers.¹⁸ Cacao is grown in 14 of the 22 provinces, with East Sepik, Bougainville, Madang, East New Britain, Morobe, West New Britain and New Ireland standing out as major producers.¹⁹

Labor market

Nearly 85% of the labor force works in the agricultural sector, which is largely dominated by smallholder farming.²⁰ Despite this, in some of the highly rural and predominantly agricultural provinces such as Bougainville, East Sepik, Madang and West Sepik, around half of households have an income source other than their own farm.²¹ Notably, cocoa and coffee, Papua New Guinea's are the two main cash crops.²² Formal job opportunities are limited, and the share of vulnerable employment – i.e. the share of family workers and own-account workers as a percentage of total employment - is around 80%.²³

Based on data from the 2009-10 Household Income and Expenditure Survey Report (which is the latest survey with labor market information), we estimated rural labor force participation rates (LFPRs) for ages 25-59 of 84.4% for men and 80.5% for women (see note d to figure 1 for

¹² The World Bank. (2020b). GNI per capita, Atlas method (current US\$) - Papua New Guinea. Retrieved from <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=PG>

¹³ IFAD. (2020). Papua New Guinea. Retrieved from https://www.ifad.org/en/web/operations/country/id/papua_new_guinea

¹⁴ CIA. (2020). Op cit.

¹⁵ CIA. (2020). Op cit.

¹⁶ Nakatani, R. (2017). Op cit.

¹⁷ Nakatani, R. (2017). External Adjustment in a Resource-Rich Economy: The Case of Papua New Guinea. *IMF Working Papers*, 17(267), 1. <https://doi.org/10.5089/9781484325063.001>

¹⁸ Ministry of Agriculture. (2018). Cocoa. Retrieved from <https://www.agriculture.gov.pg/cocoa/>

¹⁹ Ministry of Agriculture. (2018). Op cit.

²⁰ Schmidt et al. (2019). Op cit.

²¹ Schmidt et al. (2019). Op cit.

²² IFAD. (2020). Op cit.

²³ The World Bank. (2020b). Op cit.

more details). Rural unemployment rates for ages 25-59 from this same source were 5.1% for men and 3.3% for women.

Social Conditions

Poverty and Inequality

Papua New Guinea's topography and the scarcity of high-quality land has limited the capacity of people to profitably engage in agricultural production. Poverty rates have been high and stagnant at around 40% since the end of the 1990s²⁴, and the Asian Development Bank (2017) suggests that 37.5% of the population lives below the poverty line. It is estimated that there are large rural/urban and regional differences in poverty rates and poverty lines.²⁵ For example, the poverty rate was 12.4% in urban Momase and 38.0% in rural Momase. The poverty line per adult equivalent per month for rural Momase was PGK 253 compared to PGK 445 for urban Momase. The poverty line for NCD was PGK 877 compared to PGK 439 for Highlands, PGK 454 for Islands, and PGK 522 for Papuan.

The World Bank reports a Gini coefficient of 41.9 for 2009 for PNG, which suggests that income inequality is not especially high for a developing country. On the other hand, one-fifth of the population is estimated to have 80% of total income²⁶, which suggests that the World Bank reported Gini coefficient may be inaccurate or reflect generally homogeneous poverty levels across PNG, especially for rural areas. The latter are especially affected by limited access to infrastructure and the export hubs of Lae and Port Moresby.²⁷

Material vulnerability and precarity have recently been exacerbated by climate events. In 2015 and 2016, approximately 10% of the country's population suffered from a major food shortage because of a severe drought.²⁸ Because of global warming, climate shocks are expected to increase in frequency and intensity in the future, thereby putting at risk the capacity of many Papua New Guineans' to produce their own food. This has been highlighted as a major driver of economic and material uncertainty, especially in rural regions.²⁹

Health

Papua New Guinea's authorities have increased public health spending to 4.5% of GDP, of which nearly 20% is received from donors and development partners.³⁰ Despite this relatively high public health spending, health indicators remain low compared to countries with similar

²⁴ Allen, B., Bourke, R. M., & Gibson, J. (2005). Op cit.

²⁵ Asian Development Bank. (2020). Poverty Data: Papua New Guinea. Retrieved from <https://www.adb.org/countries/papua-new-guinea/poverty#accordion-0-0>

²⁶ IFAD. (2020). Op cit.

²⁷ Allen, B., Bourke, R. M., & Gibson, J. (2005). Op cit.

²⁸ Schmidt et al. (2019). Op cit.

²⁹ Schmidt et al. (2019). Op cit.

³⁰ Public Health Nigeria. (2018). Papua New Guinea: Health Information. Retrieved from <https://www.publichealth.com.ng/papua-new-guinea-health-information/>

development levels.³¹ Access to primary health services which was already low, declined even further during the last 15 years, with only 1 doctor registered for every 17,000 inhabitants.³² Service-related health indicators also worsened over the 2006-2016 period, despite the authorities' goal of providing universal primary health.³³ This situation affects rural and remote areas more acutely, where health facilities are scarcer and access to healthcare is substantially more limited.³⁴

One challenge is access to 'protected/piped water' sources, with marked disparities among regions. In rural Madang less than 10% of people have access to improved and safe water sources, while East Sepik and Bougainville perform best in this regard, albeit with only 40% and 38% of their population with access to safe drinking water.³⁵ Overall, only around 8% of the rural population has access to proper sanitation.³⁶

The societal and economic costs of health deficiencies are high. The monetary costs of child undernutrition were estimated at 2.8% of GDP in 2016, and the incidence of other important diseases is on the rise, for example diabetes, ischemic heart disease and cancer.³⁷ According to 2009-2010 World Health Organization data, approximately 49.5% of children under five were stunted, while 27.9% were underweight.³⁸ In 2018, an estimated 48 children out of every 1,000 born died before the age of five.³⁹

Education

Papua New Guinea's education expenditure in 2017 and 2018 represented 10.7% and 8.7% of total government expenditure, and 2.0% and 1.9% of GDP respectively.⁴⁰ Primary adjusted net enrolment rate was 75.5% in 2017, with a higher rate among boys than girls (78.1% against 72.8%, respectively). General enrolment rates for secondary education are much lower at 17.5%.⁴¹ In 2010, 65.3% of men ages 15+ were literate, against 57.9% of women.⁴²

There are large inequalities in education access across income levels. If the highest educated household member is considered, poor households have on average one whole school year

³¹ World Bank Group. (2017). Papua New Guinea Economic Update: Reinforcing Resilience. Retrieved from <http://pubdocs.worldbank.org/en/150591512370709162/PNG-Economic-Update-Dec-2017.pdf>

³² Public Health Nigeria. (2018). Op cit.

³³ World Bank Group. (2017). Op cit.

³⁴ World Bank Group. (2017). Op cit.

³⁵ Schmidt et al. (2019). Op cit..

³⁶ Milano, A. (2020). Poverty in Papua New Guinea. Retrieved from <https://borgenproject.org/poverty-in-papua-new-guinea/>

³⁷ World Bank Group. (2017). Op cit.

³⁸ World Bank Group. (2017). Op cit.

³⁹ Asian Development Bank. (2020). Op cit.

⁴⁰ The World Bank. (2020a). Education Statistics - All indicators. Retrieved from <https://databank.worldbank.org/reports.aspx?source=Education%20Statistics>

⁴¹ The World Bank. (2020a). Op cit.

⁴² The World Bank. (2020a). Op cit.

less than non-poor households.⁴³ Estimates suggest that less than 8% of students finish grade 12, while less than 1% of the population completes university-level education.⁴⁴ In 2015, 23,000 students finished grade 12, from which only 4,700 continued to higher education in 2016, which was high enough to saturate the capacity of the country's tertiary education system.⁴⁵ Women fare worse in practically all education statistics in almost all regions.

4. Income ladder and gaps to a living income, rural Papua New Guinea 2020

Figure 1 is a family income ladder for 2020 for rural Papua New Guinea. It provides context on gaps to a living income. The Anker Living Income Reference Value for rural PNG is compared with four other indicators: family income at the World Bank \$1.90 poverty line (PL) for low-income countries; family income at the World Bank \$3.20 PL for lower-middle income countries; family income at the national rural PL for PNG; and family income if members in the family earn the national minimum wage. Before discussing results, it is important to note that values in figure 1 are less precise than usual for countries, because data for PNG are generally relatively old and less reliable than usual for other countries. See notes to the income ladder for elaboration on this, especially note h.

The Anker Living Income Reference Value for rural PNG is 72% higher than family income at the national rural poverty line from 2010 which we updated by inflation to 2020. The Anker Reference Value is 92% higher than family income at the World Bank international poverty line for low-income countries and 14% higher than family income at the international poverty line for lower-middle income countries; this implies that the Anker Reference Value is probably somewhere around 50% higher than PNG's relevant international poverty line (see note b to the income ladder for further discussion on this). The Anker Reference Value is 50% higher than family income if family members earn the minimum wage, which is to a good extent mainly relevant for formal employment in urban areas.

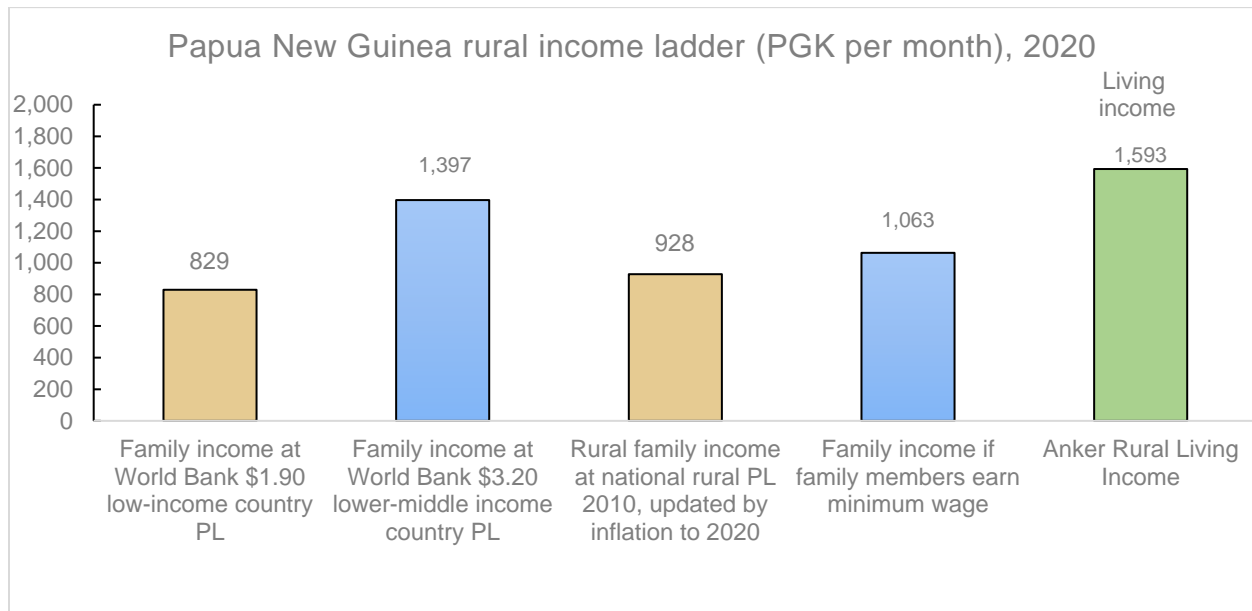
These large gaps to living income indicate that there is a way to go before rural PNG families earn enough to have a basic but decent living standard. Given the great diversity across PNG however, to better understand and measure location-specific living incomes within PNG, further analysis and quality-assured Anker methodology studies are required.

⁴³ Schmidt et al. (2019). Op cit.

⁴⁴ International Labour Organization. (2013). Youth Employment Policy Brief : Papua New Guinea.

⁴⁵ Hayward-Jones, J. (2016). Opinion: Seven key challenges facing Papua New Guinea ... and how to tackle them (part 1). Retrieved from <https://www.businessadvantagepng.com/opinion-seven-key-challenges-facing-papua-new-guinea-and-how-to-tackle-them-part-1/>

Figure 1

**Notes:**

^a PNG national rural poverty lines are estimated by region and were last set in 2010. They are expressed in adult equivalent units, which we converted to a value for a family with 5 persons (2 adults and 3 children). We used the average of values for four regions (rural Momase, Highlands, Papuan, and Islands) to represent rural areas and updated this by inflation to 2020. There has been around 68% inflation from 2010 to 2020. There are very large differences in poverty lines by region and for rural and urban areas. For example, poverty line per adult equivalent per year in 2010 was K3,334 for NCD compared to K2,145 for urban Momase and K1,503 for the 4 other regions.

^b The World Bank international poverty lines were estimated and reported for both low-income countries (\$1.90 PPP) and lower-middle income countries (\$3.20 PPP), because it is not obvious whether for comparative purposes we should use the low-income country poverty line or the lower-middle income country poverty line for PNG (especially for rural PNG), despite PNG being classified as a lower-middle income country by the World Bank. First, PNG is at the lower end of the World Bank's lower-middle income country group (which is based on national GNI per capita in USD). This implies that our comparator should probably be between the World Bank \$1.90 poverty line and \$3.20 poverty line. Second, GNI per capita in USD overestimates PNG's living standard for most people, because PNG is not nearly as wealthy in purchasing power as implied by its GNI per capita in USD because of PNG's high living costs for a developing country. This is demonstrated by PNG's USD/PPP ratio which is only 1.19 (indicating that PNG is only 19% less expensive than the United States) compared to a typical ratio of 2.0 or greater for developing countries (indicating that developing countries are typically at least 50% less expensive than the United States). Third, since PNG is a resource-rich country, its GNI is boosted without a commensurate increase in most household incomes. Fourth, reinforcing the questionability of the World Bank's classification of PNG as a lower-middle income country for most of its people is PNG's low Human Development Index. Fifth, the unusually large difference in incomes and poverty lines between rural and urban areas of PNG implies that its national GNI per capita significantly overstates incomes and living standards in rural areas.

^c Family size of 5 is used to estimate family income at the poverty line. It is in between: (i) average rural household size of 4.73 excluding single person households (that do not include children) and especially large households (that probably include more than two adult earners), leaving 85% of all rural households in the sample, and (ii) family size indicated by the child mortality-adjusted total fertility rate for rural PNG of 4.1 which implies a nuclear family size of just over 6.

^d Number of full-time equivalent workers per family of 1.67 is used for expositional purposes to estimate rural poverty line incomes. This value was estimated using values from the 2009-10 Household Income and Expenditure Survey Report, which is the latest survey with labor market information for PNG. To

calculate rural labor force participation rates (LFPRs), we excluded "homemakers", "students" and "dependents" assuming that they are out of the labor force. This gave a rural LFPR of 84.4% for men ages 25-59 and 80.5% for women ages 25-59. Rural unemployment rates for ages 25-59 from the same source was 5.1% for men and 3.3% for women. For the part-time employment rate, we assumed 30.0% for men and women.

^e The Anker Living Income Reference Value is estimated directly based on statistical analysis and therefore does not have an explicit reference family size (although rural reference family size falls from 6 to 4 with development in Anker living wage benchmark studies).

^g National minimum wage was last increased on July 1, 2016. There has been around 21% inflation since then to 2020. As this is a national minimum wage, it is applicable to rural areas as well as urban areas and for all sectors of the economy - which means that it is in a sense relatively high for rural areas and relatively low for urban areas.

^h Values in the income ladder are less precise than is usual for countries because of the need to use relatively older and less reliable data for PNG. For example, the latest national poverty line is from 2010 which we updated by the considerable amount of inflation since then (68%). Number of full-time workers in reference family, which is used to estimate family income if family members earn minimum wage, is based out of necessity on data from 2009-10 and some reasonably strong assumptions.