An Overview of Existing Data in Papua New Guinea: Issues and Challenges

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Abstract

The objectives of this paper are to overview existing data on Papua New Guinea and to highlight common issues and challenges associated with PNG data. Over 25 surveys, administrative and other databases were reviewed and listed along with its descriptions. Evaluation of some selected data is broadly based on its scope and coverage, frequency of collection, comparability with previous waves, quality of the data and how it contributes to the SDGs monitoring. Data issues such as lack of availability, public access and openness, timely dissemination, data information sharing platforms, and utilisation were emphasised.

Key words: PNG, Database, Surveys

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An Overview of Existing Data in Papua New Guinea: Issues and Challenges

1. Introduction

In the last two decades, demand for evidence-based policy for sustainable development has increased globally. This, in turn, has increased the demand for a reliable, more frequent, and easily available data. Despite complex challenges associated with collection, processing and reporting of data for development; governments and international agencies are willing to invest and put great effort to close the data demand and supply gap at the national, sub-national and international levels. But do all the countries able to succeed in closing the data gap? The answer is negative, in general. Some countries are better equipped with data than the others, some countries with less supply of data are catching up but some of them are still struggling to gather sufficient information on basic human development indicators.

Another issue that is pertinent to understand demand and supply relationship is the degree of easiness in availability and accessibility of the existing data, irrespective of how less the data is. In fact, the very first fundamental principle of the Official Statistics adopted by the United Nations' General Assembly on 29 January 2014 underlines government's role in data collection and its dissemination for public use. It states that "Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information." However, government agencies hold a significant amount of data and only a small number of data are available for public use or use on demand. Degree of openness of data producers also vary across countries. Some countries are less open than the others in terms of open data inventory and a poor openness performance causes a serious concern for the evidence based policy decisions. Monitoring and evaluation of existing programmes become difficult and new projects are filled with uncertainty in the absence of timely and sufficient information.

In view of the sustainable development goals (SDGs), with 17 goals, 169 targets and 230 associated indicators, SDGs provide comprehensive measures of possible actions taken by countries. Priorities areas under SDGs include poverty, health, education, climate change, economic inequality, innovation, sustainable consumption and peace and justice, among others.

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An implementation and tracking progress on those goals are keys to the success of SDGs. This requires reliable publicly available data to monitor the SDGs over time.

Recently, the progress of many the MDGs between 2000 and 2015 were evaluated against either older official data for baseline and target surveys, modelled and extrapolated estimates, not very reliable and thin data collected by NGOs, and international agencies. This clearly indicates that lack of reliable and timely data. DNPM (2015) [Department of National Planning and Monitoring report 2015] recognised data issues as one of the major challenges for MDG evaluations and recommended for collection of timely, up-to-date comparable and accurate baselines, and early mapping of available statistics for quality monitoring and evaluation of development activities.

This leads to two fundamental questions: 1. at what extent, sufficient and reliable data exist for PNG that can monitor and evaluate SDGs? 2. what are the issues underlying with existing data? These questions create basis for this study. To answer these questions, this paper attempts to provide an overview of the extent to which data are available in Papua New Guinea and review issues involved.

In this paper, over 25 surveys, administrative and other databases were reviewed and listed along with its description. The analysis uses various national and international data agencies including PNG's National Statistical Office. Evaluations of some selected data are broadly based on its scope and coverage, frequency of collection, comparability with previous waves, quality of the data and how it contributes to the SDGs monitoring. Data issues such as lack of availability, public access and openness, timely dissemination, data information sharing platforms, and utilisation were emphasised. However, this paper does not claim to be exhaustive as the study largely exclude data from private sectors and critical areas of environment, crime, agriculture. Thus, while it provides an overview of key datasets in the public domain, a comprehensive gap analysis and recommendations are needed to strengthen the claim.

This paper is organised as follows. In Section 2, PNG's key existing datasets are surveyed, and evaluated in terms of issues and usefulness. Section 3 provides a summary of common data issues and Section 4 concludes the paper.

2. Overview of Existing Data

Despite relatively shortage of data in Papua New Guinea, there are a range of surveys and administrative data collected by various government, private, research and international organisations and researchers. In this section, some of the key survey and administrative data are profiled and reviewed[1].

2.1. Household Income Expenditure Survey (HIES)

HIES is one of the most important useful microlevel surveys for monitoring and evaluation of SDGs. It collects microdata on income and expenditure with an aim to enable rebasing of the consumer Price Index. It collects information on income, expenditure, demographics, education, dwellings, ownership of durable household goods, health, employment, loans and private transfers, disputes and personal security. All information is collected at the household level[2], and individual family member level[3] supplemented by anthropometric data for children aged six years or younger. The data also include individual record of all food and non-food purchases for 14 consecutive days for all the households.

The latest 2009/2010 HIES is the 3rd HIES survey in the series. First two HIES waves were collected in 1975-76 and 1996, respectively. While first and third HIES was conducted by PNG National Statistical Office (NSO), the second was conducted by Unisearch and the Institute of National Affairs. The 1996 HIES was like 2009/10 in some aspects and different in some other aspects. However, the scope of 2009/10 HIES was broader than the previous one due to increase in both the item indicators and number of households in the selected areas and considering requests to include questions on poverty and other related subject areas.

HIES data analysis is expected to help government, aid agencies and donors to provide information on various SDGs including related to poverty, education, health, gender, land etc. This will assist future policy decisions and analysis to be better based on reliable evidence,

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[1] The surveys and data lists included in the review are not exhaustive. Other surveys will be included in the list in the subsequent revised version of the paper. Moreover, data description and related information are obtained from secondary sources (websites, reports and other publications). An error in the source may contribute to the errors in the review.

[2] e.g., housing characteristics, ownership of consumer durables, non- food consumption, access to various types of public services, and incidence and resolution of different types of disputes

[3] e.g., age, sex, education, health, employment status, receipt of remittances, and personal security

such that they can better support improvements in the living standards of Papua New Guinea's people. In the current form, HIES helps to monitor several goals and indicators

In view of current and future uses, HIES suffers from following issues:

1. Less frequent and longer collection cycle: This data is only major source of income and expenditure. However, this is collected with irregular and large gap of years. For instance, first HIES wave was collected at the time of independence (1975-76). It took 20 years for another round of HIES in 1996 and then latest survey is 2009/10 (after a gap of 13-14 years). It is recommended that next HIES is conducted as soon as possible and then frequency interval should be reduced (3-5 years should be ideal).

2. Comparability from previous rounds: While broadly all the HIES waves collected income and expenditure data, the data is not easily comparable for reasons such as differences in the definitional changes, coverage area changes etc.

3. Dissemination problem: Data was collected in 2009/10. However, first report could be available only in 2012.

Some of the recommendations include alignment of HIES survey with SDGs monitoring and evaluation, it is recommended that collection cycle should be reduced to regular 3-5 years, data should be compared across wave in future and dissemination of data and reports should be in timely manner for the public use. Also, NSO should examine the possibilities of a. inclusion of additional key questions related to SDGs in the future waves and, b. if it is possible to collect follow-up data from a sub-sample of households to create longitudinal version of the HIES. Because of longitudinal nature of data, interests of researchers in the data use will substantially increase.

2.2 Demographic & Health Survey (DHS)

In line with other countries, the DHS is another major source of data. It provides information on demography, health, levels and trends of fertility, infant and child mortality, maternal mortality, family planning and HIV/AIDS and other socio-economic information such as education, employment, housing, wealth and religion.

DHS is conducted by NSO at an interval of 10 years. First DHS was conducted in 1996 by the NSO as part of the PNG's Population and Family Planning Project (1993-1998). It used a sample of 25,000 households, based on the 1990 census sampling frame, for a household

questionnaire. The individual questionnaire was administered in a second phase to all women ages 15-49 in around 5,000 households. The 20,000 households not included in the second phase had a different questionnaire that included a summary birth history. The second DHS was conducted in 2006. The latest 2017 DHS survey is in progress. Analysis based on this data is aimed to be used to by policy makers to evaluate and improve family planning and maternal and child health programs.

Like HIES, DHS too suffers from the following issues:

1. Frequency of data collection: Frequency of PNG DHS is same as many other countries in the world (10 years). However, unlike other developing countries, this is the only data source designed and available to gauge certain demographic and health indicators. Given rampant cases of domestic violence against women, tuberculosis and HIV/AIDS spread and higher maternal mortality rate, 10 years' data collection gap is unreasonable.

2. Comparability from previous rounds: While broadly all the DHS waves have similar information, new DHS questionnaire is not the same as the 2006 DHS due to definitional changes, data collection agency changes, coverage area changes and newly added schedules etc.

3. Dissemination: Last DHS survey was conducted in 2006. However, this is not easily available for publicly users. As expected, DHS 2006 data is not widely utilised by policy makers, academicians primarily due to poor dissemination.

4. **Delay in the completion of 2016 survey**: The completion of the DHS was delayed by more than a year and is likely to be available even a year later.

As DHS provides some of the key SDGs indicators, it is recommended that collection cycle should be reduced to regular 3-5 years with follow-ups of a representative subsample, data should be compared across waves and dissemination of data and reports should be in timely manner for the public use. It is also recommended for a follow-up a small subsample of DHS every two-years to create a longitudinal data and reliable projections.

2.3 National Population and Housing Census (NPHC)

As in any other countries, the objective of the PNG national population and housing census[4] was to collect data on all individual residing in PNG through face to face interviews. Census is the most important source of complete, reliable and updated statistics on population statistics necessary to conduct the national development policies; to allow the production of indicators for the follow-up and monitoring of the MDGs; to strengthen the capacities in terms of collection and data analysis of socio-demographic data and to update the existing sampling frame necessary for carrying out other sample based surveys on households.

Previously known census include census 1980, 1990, and 2000. The next census round is expected in 2020. Census 2011 had collected socio-demographic information on age, sex, marital status, religion, education, migration, economic activity, occupation, industry and household income generating activities.

While majority of the census globally suffer from many limitations, PNG's census too faces numerous challenges. Some of the issues include a. poor data quality, b. census coverage issue, c. non-response errors, d. not highly skilled enumerators, late data dissemination in the form of the national report.

2.4 Consumer Price Survey (CPS)

The PNG NSO compiles a quarterly consumer price index (CPI) and a quarterly wholesale price index (WPI). WPI is not currently in the public domain. In May 2014, the NSO changed its CPS methodology adopted since 1970s which was based on a consumption basket. In the current methodology, a new CPI series is computed based on the 2009-10 Household Income Expenditure Survey. CPS is collected as primary source of computation of consumer price index and inflation in PNG. Major expenditure groups included in the survey include food and non-alcoholic beverages, Alcoholic beverages, tobacco and betelnut, Clothing and foot wear, Housing, Household equipment, Transport, Communication, Health, Recreation, Education, Restaurants and hotels, Miscellaneous collected from shops and stores in the Port Moresby, Lae, Goroka-Mt Hagen-Madang, and Alotau-Kimbe-Rabaul towns. Even though CPS does not directly contribute in monitoring and evaluating progress of SDGs, price is a key factor

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[4] National Statistical Office (NSO). (2014b). Final figures Papua New Guinea National Population and Housing Census 2011. Waigani: NSO. Web Source: https://www.nso.gov.pg/index.php/projects/censuses

associated with many goals and indicators indirectly. However, CPS is not free from limitations. For instance, PNG currently has only CPS for selected urban areas. However, a significant population live in rural areas as well where prices for consumer goods might be significantly different. It will be interesting to see if two CPI's are collected: one for rural and one for urban.

2.5. Census of Business Activities (CBA)

The National statistical office conducts CBA every three years. CBA is conducted during the bench marking and rebasing year for National Accounts. The key purposes of CBA are collect information on all individual registered businesses in PNG using business register (BR). The BR supplies a framework for CBA and provide a means of coordinating the coverage of CBA to achieve consistency in classifying statistical reporting units. The CBA is the main sources of data for the compilation of the National Accounts of PNG. About 90% of CBA data is used to compile very important economic indicators such as the Gross Domestic Product (GDP), Gross Value Added (GVA) etc. As such this censuses and surveys are crucially as important as the Population & Housing Census. CBA is also used to update the existing sampling frame for the Business Liaison survey (BLs) which is jointly conducted by the central Bank of PNG and NSO every quarter of the year. PNG NSO has conducted CBA for the years 2001, 2009, 2013 and 2017. 2017 CBA is currently underway.

Some of the issues include:

1. Frequency of data collection: Currently it is three years. However, it is such an important data source that it should be collected annually at least.

2. Coverage: Non-response error is very large in CBA. In 2013, response rate was only about a little higher than a quarter. However, it is expected that in 2017 CBA, response rates will be significantly higher.

3. Dissemination: Dissemination remains an issue with this data as well.

2.6 Civil Registration System

Civil registration system (CRS) is a statistical system which collects administrative information on birth, death and marriage, and records information by age, and sex. This administrative data

combined with other surveys and census can help to evaluate many SDGs. However, in the current form, PNG's CRS is incomplete and not very useful. CRVS BD4H Initiative in Papua New Guinea 2014 rapid Assessment report[5] suggest that in PNG the coverage of birth and death registration was less than five percent, and the collection of cause of death (COD) data was very limited. This suggests that coverage of CRS or CVR is very limited. Other challenges are to increase the number of civil registration offices, to strengthen the ongoing registration of births, and to increase the level of death registration, which is not presently linked to the National ID Card (NID).

2.7. National Health Information System (NHIS)

The NHIS is a statistical system[6] administered by the department of Health and is designed to support policy making, evaluation, and monitoring of health, morbidity, fertility and mortality related activities. NHIS databases are available in the provinces to be used at any time when needed. NHIS databases are available in the provinces to be used at any time when needed. Information should be used at the point of collection before it is compiled for analysis at the national level. NIHS has better coverage, is more complete than the CRS and its raw data is stable from year to year. However, it also suffers from some limitations: a. it doesn't record a very significant proportion of all vital events and illnesses; b. it is embedded with 2000 census data with cohorts by age group (especially under 1 year old) being undercounted, mostly in Highlands provinces; c. it is not very efficient and is of very little statistical value.

2.8. National School Census

Since 2007, the Department of Education (DOE) collects data from all educational institutions through an Annual School Census— with information published at the PNG Education Indicator Dashboard.[7] Once a year school census forms are distributed and collected from all schools during School Census Week. The information collected are used to chart the progress

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[5] Source: *mspgh.unimelb.edu.au/dataforhealth/resources/resources/papua-new-guinea*
[6] Web source: www.health.gov.pg/publications/SPAR_2013.pdf
[7]It was noted that 'the service statistics of the DOE are restricted to the "at-school" population and measures how much children had learned during their time at school. Until recently, the DOE routinely collected information on school enrolment and staffing. Enrolment and retention rates and other relevant indicators were calculated from this data.' Source: http://www.education.gov.pg/sites/Devinfo%20Dashboard/index.html

of the National Education Plan and assist provinces for future education services. This data can be used to evaluate number of SDGs.

2.9. Bank of PNG Surveys

Bank of Papua New Guinea (BPNG) surveys provide crucial information helpful in computation of economic and financial indicators published in its Quarterly Economic Bulletin (QEB). Some of the surveys are Business Liaison Survey (BLS) and Employment Survey (ES) for private sector firms and collect data on sales, employment etc. Apart from these internal surveys, BPNG provides financial, trade and external sector statistics.[8]

2.10. National Statistical Office Statistics

Apart from disseminating core survey, PNG NSO[9] also publishes a range of statistics such as trade statistics, International Migration Data etc. through publications.

2.11. 2015 World Bank Enterprise Survey

World Bank Enterprise Survey 2015[10] is a firm-level survey of a representative sample of Papua New Guinea's private sector. Business owners and top managers in 65 firms were interviewed from August 2015 through June 2016. The survey covers a broad range of business environment topics including access to finance, corruption, infrastructure, crime, competition, and performance measures.

PNG enterprise survey is part of global enterprise survey. Since 2002, the World Bank has been collecting various surveys through face-to-face interviews with top managers and business owners in over 155,000 companies in 148 economies. Since 2005-06, most data collection efforts have been centralized within the Enterprise Analysis Unit; these surveys are conducted using the Global Methodology. Thus, these surveys are very useful for comparing business environment across economies.

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[8] For more details, visit BPNG website https://www.bankpng.gov.pg/
[9] Website: https://www.nso.gov.pg
[10] Web source: http://www.enterprisesurveys.org/data/exploreeconomies/2015/papua-new-guinea

2.12. 2002 Public Expenditure and Service Delivery Survey in Health and Education

With objectives to study resources flow in education and health sectors, the Public Expenditure and Service Delivery Survey (PESD)[11] was conducted jointly by The World Bank, The Australian Agency for International Development - AusAID, The National Department of Education, Papua New Guinea, The Department of National Planning and Rural Development in February-August 2002. The PESD was launched by the World Bank as part of the Bank's analytical work on poverty in Papua New Guinea, in close cooperation with the country's government and the Australian Agency for International Development.

The health facility survey was not intended to be a full-service delivery survey to keep the field operations and costs within manageable limits. It was added as a rider to the school survey. Health facilities that could be reached within 20 minutes from the sample schools were covered. The survey covered 117 health facilities. A short instrument collected information on how often the facilities were open, the presence of staff, and the availability of key medicines.

For education, PESD survey was a part of a multi-country pilot study which combines surveys of primary schools with household and other micro surveys to assess service delivery systems in education, measure performance, and establish a baseline for examining the impact of policy and institutional reforms over time. The focus of the project was on expenditure in education. The PESD education sector survey covered 214 schools in 19 districts across 8 provinces (out of 20), with two provinces selected in each of the four main regions. Work on the PESD project was launched in late 2001 as part of the World Bank's analytical work on poverty in PNG. The project was launched in close consultation with the Government of PNG and AusAID. Work on the PESD survey started in early 2002. The survey operation itself was implemented by the Education Department of the National Research Institute (NRI) in Port Moresby.

2.13. 2012 PNG Promoting Effective Public Expenditure Survey

As part of The PNG Promoting Effective Public Expenditure Project[12], this survey collected an extensive nationwide survey of more than 360 schools and health facilities. Fieldwork was conducted from September - December 2012, where survey teams travelled to some of PNG's most rural and remote locations to complete over 1276 separate surveys. The provinces

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[11] Web Source: http://catalog.ihsn.org/index.php/catalog/1023/study-description

[12] Web source: https://devpolicy.crawford.anu.edu.au/png-budget-project/expenditure-survey

surveyed were: Southern (Papua) region: Gulf, National Capital District; Highlands region: Enga, Eastern Highlands; Momase region: West Sepik (Sandaun), Morobe; and Islands region: West New Britain, East New Britain. This survey is comparable with 2002 PECD for analysis purposes.

2.14. 2011 Early Grade Reading Assessment

Jointly conducted by United States Agency for International Development (USAID) and RTI International, the Early Grade Reading Assessment (EGRA)[13] was an oral student assessment designed to measure the most basic skills for literacy acquisition in the early grades: recognizing letters of the alphabet, reading simple words, understanding sentences and paragraphs, and listening with comprehension. Population coverage for this survey in PNG included all elementary and primary schools in the province of Madang Province (2011), National Capital District (2012), East New Britain (2012), and Western Highlands (2013).

The USAID Education Data for Decision Making (EdData II) project developed the EGRA methodology and has applied it in 11 countries and 19 languages. It has been adopted and used by other implementing partners in more than 30 other countries and more than 60 other languages. Data from EGRA have been used for feedback on teacher practice in rigorous but easy-to-understand ways. Many countries have shown an interest in using it as a springboard to improve reading, and have gone on to redesign their teacher training around reading.

2.15. World Bank Group Country Survey 2014

The purpose of the 2014 World Bank Group Country Survey[14] was to gauge the views of clients and partners who are either involved in development in Papua New Guinea or who observe activities related to social and economic development. The objectives of this survey was to assist the World Bank Group in gaining a better understanding of how stakeholders in Papua New Guinea (PNG) perceive the Bank Group; to obtain systematic feedback from stakeholders in Papua New Guinea regarding their views regarding the general environment in Papua New Guinea, their overall attitudes toward the World Bank Group in Papua New Guinea, overall impressions of the World Bank Group's effectiveness and results, knowledge work and

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[13] Web source: http://catalog.ihsn.org/index.php/catalog/6275
[14] Source: http://microdata.worldbank.org/index.php/catalog/2195/get_microdata

activities, and communication and information sharing in Papua New Guinea and perceptions of the World Bank Group's future role in Papua New Guinea.

In summary, the purpose of this survey was to receive greater insights into how the Bank's work is perceived and it helps World Bank Group to assess the views of its stakeholders, and to develop more effective strategies that support development in Papua New Guinea. This survey was conducted by Public Opinion Research Group - The World Bank Group.

2.16. PNGINA Labour Market Surveys 2013-14

Institute of National Affairs (PNGINA) Labour Market Survey collects data from the government, private, and informal sectors over the period December 2013 to July 2014 (Jones and McGavine, 2015)[15]. It includes information on a broad range of occupations and industries, general information about the firm and its employment practices. The informal sector survey consists of informal traders who comprise over 460 responses (432 useable) from eight provinces and unregulated employees who comprise over 620 responses across two provinces (National Capital District and Morobe [Lae]). Data were collected through in-person surveys at market places and domestic residences. The collection was primarily conducted by research assistants and questionnaires were delivered in Tok Pisin. The response rate for the informal sector was very high (> than 99%). In contrast, the response rate to the formal survey was very low. In total, 570 formal surveys were distributed across the range of Papua New Guinea's industry sectors and 107 survey responses were received (19%).

2.17. Private Sector Survey

PNGINA's Private Sector Survey[16] is a 5-yearly survey of the Business and Investment Environment in Papua New Guinea. The objective of the survey is to better understand the issues and challenges that businesses face and to advise policy makers, notably the Government and its agencies. Thus, private sector survey provides a critical assessment by businesses themselves across the country of the changing challenges and needs of businesses operating in

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[15] Jones, L.T. & P. A. McGavin (2015): Grappling afresh with labour resource challenges in Papua New Guinea: a framework for moving forward, Institute of National Affairs, Port Moresby NCD Papua New Guinea, June 2015. Available at http://www.inapng.com/pages.php?pid=118
[16] Web source: http://www.inapng.com/pages.php?pid=113

PNG. The recent ongoing 2017 survey, funded by the Australian Government, through its Governance Facility (PGF), is the latest in the series of 5-yearly survey since 1990s.

2.18. PNG Elections Database

The PNG Elections Database[17] is an interactive website created by the Development Policy Centre that include all available information on non-official election results in Papua New Guinea since Independence, for both Provincial and Open electorates. The purpose of this database is to facilitate data users who can explore the election results using an interactive tool, read analysis about trends, or download the datasets for further research. The Database site also includes the first interactive map of PNG's electoral boundaries.

2.19. PNG Budget Database

The PNG Budget Database[18] is an Excel spreadsheet which compiles information from PNG national government budgets from 1989 to 2017. The database is designed to be used by any member of the public, government, NGO, media or researcher for their own analysis and comparisons over time. The database has been compiled to be in the same format as the original budget documents and compiles information about revenue, expenditure, GDP, inflation, finance and debt from Volume 1 of successive budgets. The database is updated twice yearly, when the FBO (Final Budget Outcome) is released, and then at budget time.[19]

2.20. National Nutrition Survey 2005

Papua New Guinea National Nutrition Survey[20] was carried out in 2005. In addition to demographic and micronutrient information collected through questionnaires, this survey includes measurements of child and adult anthropometry, anemia, iron deficiency, vitamin A deficiency, malarial load, and hookworm. The Papua New Guinea National Nutrition Survey 2005 collected information on nutritional status from a sample of 1403 households, including

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[17] Wood Terence, 2017. *Papua New Guinea Election Results Database*. Accessed online at: http://devpolicy.org/pngelections/datasets/

[18] URL: https://devpolicy.crawford.anu.edu.au/png-project/png-budget-database

[19] This database uses data from www.treasury.gov.pg/

[20] Web source: http://ghdx.healthdata.org/record/papua-new-guinea-national-nutrition-survey-2005

937 young children aged 6-59 months, 847 women ages 15-45, and 804 men over the age of 15. As this survey includes anthropometric measurements of children under the age of five, stunting and wasting as well as underweight and overweight of children can be derived. Previously, National Nutrition Survey in Papua New Guinea was conducted in 1982-83.[21]

2.21.PNG IMR Performance Evaluation Survey

Implemented by the PNG Institute of Medical Research (PNG IMR), the country-wide household survey is one of the principal data sources for the grant evaluation in Papua New Guinea. The objective of the survey was to simultaneously assess malaria control intervention coverage and population prevalence of parasitaemia. The household survey thus provides data for the evaluation of the performance framework indicators[22], is comprehensive independent evaluation program, and an integral part of the Round 8 grant (2009-2014). PNG IMR carried out a country-wide household survey in 2010/11 assessing the coverage with household-level malaria interventions and the community prevalence of malaria infection. The survey covered a random sample of 1,997 households in 77 villages across 17 provinces. Blood samples were collected from 9,982 individuals.

2.22. STEPS Survey

With the objectives of collecting information on socio-demographic and behavioural aspects, physical and biochemical measurements, the STEPS survey of chronic disease risk factors in Papua New Guinea[23] was carried out in three steps from March 2007 to March 2008. It was a population-based survey of adults aged 15-64. A multi-stage cluster sample design was used to produce representative data for that age range in Papua New Guinea. Step 1 included collection of socio-demographic and behavioural information. Physical measurements such as height, weight and blood pressure were collected in Step 2. In Step 3, biochemical measurements were collected to assess blood glucose and cholesterol levels. A total of 2,944 adults participated in the Papua New Guinea STEPS survey.

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[21] http://ghdx.healthdata.org/record/papua-new-guinea-national-nutrition-survey-1982-1983
[22] For further details, visit http://www.adi.org.au/wp-content/uploads/2016/11/Country-Wide-Household-Survey-Malaria-Control-Intervention-Coverage-and-Prevalence-of-Parasitaemia-2014.pdf
[23] Web Source: http://www.who.int/chp/steps/PapuaNewGuinea_2007-08_STEPS_FactSheet.pdf

2.23. Health Facility Surveys (HFS)

With the objectives to evaluate the outcome of the change in NMTP on resource availability and health worker practice, the Papua New Guinea Institute of Medical Research (PNGIMR) completed repeat, cross-sectional, country-wide health facility surveys (HFS)[24] in 2010, 2011, 2012, 2014 and 2016. Each survey was conducted in up to six randomly selected primary health care facilities in each province in PNG. Across the five HFS, an audit of health facility medicines and supplies was completed in 379 primary health care facilities, 965 health worker interviews were completed, the treatment of 2789 febrile patients was observed and exit interviews were conducted with 3108 febrile patients.

The main outcome measures of the HFS include proportion of health facilities with working microscopy or with malaria Rapid Diagnostic Tests (RDT) in stock, with the new first-line anti-malarials (ACTs) in stock (for all age groups) and proportion of health care providers trained in malaria case management (new treatment guidelines and use of RDTs) and proportion of fever cases presenting to health facilities diagnosed and treated as per national guidelines.

2.24. Behavioural Surveillance Survey Port Moresby, Papua New Guinea 2010

USAID/FHI Behavioural Surveillance Survey (BSS) collects information about most-at-risk populations (MARPs) in Port Moresby (POM), Papua New Guinea **(USAID/FHI, 2011)**[25]. The objective of the 2010 BSS survey to analyse and understand how HIV is transmitted in the country; how transactional sex contributes to the HIV epidemic there; and to help assess the outcomes of HIV outreach and prevention efforts. Respondent driven sampling (RDS) was used to survey 585 participants in November and December 2010.

Previously, in 2005 BSS were conducted in POM as a baseline survey among FSW and MSM in POM. A BSS was subsequently conducted in 2006 among out-of-school youth in POM and, in 2009, a BSS was repeated among that population. Most recently, in 2010, the International HIV Research Group (IHRG) of the University of New South Wales, Australia and PNG IMR conducted a bio-behavioural study of people who sell and exchange sex in POM. Overall, the

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[24] Web Source: http://www.pngimr.org.pg
[25] USAID/FHI (2011): Behaviours Knowledge Exposure to Interventions: Report from a Behavioural Surveillance Survey Port Moresby, Papua New Guinea, May 2011.

information gathered during the USAID/ FHI BSS will make it possible to tailor programs to the needs of these populations, and to serve as a baseline for future evaluations of program outcomes.

2.25. 2015 Transparency International Survey on Corruption

The objectives of Transparency international survey 2015 on corruption[26] was to record general public's views on the levels and consequences of corruption in Papua New Guinea. A total of 1280 individuals were surveys from Port Moresby Urban, inside city limits; Central Province, (outside NCD limits, 20-~50kms out); Lae and Morobe villages; Goroka and EHP villages, Kokopo and ENB villages. The survey was funded by the Australian Department of Foreign Affairs and Trade.

2.26. School Based Civic Education Survey

School based civic education survey[27] aims to study civic attitudes, skills and knowledge among Grade 10 students. The baseline survey was conducted in 2014 in five provinces of Papua New Guinea. These provinces are: NCD, Central, Simbu, Kokopo and Madang. The survey was designed to help the youths to understand how governance processes and the laws are supposed to work. They need to understand concepts like human rights, democracy, rule of law and advocacy and can apply these in their communities. Thus, the objectives of the survey were: a. to help students to describe and reflect upon the characteristics and the underlying principles of a democratic society where good governance is applied, b. to help the students to describe and demonstrate skills of active citizenship which model and promote democratic governance, c. to help students to reflect upon the features of national history and culture that contribute towards forming a shared identity. School based civic education project is an initiative of the Transparency International of Papua New Guinea (TIPNG) and was implemented in collaboration with the Institute of National Affairs (INA) and the National Statistics Office (NSO) of Papua New Guinea (PNG).

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[26] Source: http://www.transparencypng.org.pg/_images/news/120516-TIPNG_Public_Opinion_Survey_on_Levels_Consequences_of_Corruption__State__Society_Response.pdf.
[27] SBCE Baseline Survey (2015): http://www.transparencypng.org.pg/programs/school-based-civic-education/ and www.inapng.com/pdf.../FINAL%20Baseline%20Survey%20Report%20030715.pdf.

2.27. 2017 PNG International Visitor Survey

With a proposed objective of collecting essential data associated with PNG's national tourism policy and marketing efforts, the goal of this survey[28] is to assist industry partners and stakeholders with evidence based decisions to meet their market needs. The survey gauges' travel patterns and behaviour of visitors arriving by air. It will be tracking visitor expenditure by market segment to get important data on consumer behaviour, profiles and preferences. This survey is expected to conducted the Papua New Guinea Government through the PNG Tourism Promotion Authority (PNGTPA) in partnership with the International Finance Corporation (IFC), and a member of the World Bank Group. The New Zealand Tourism Research Institute of Auckland University was engaged by the IFC to conduct the online survey and will be supporting the PNG TPA in capturing and measuring data.

Starting January 1, 2017, PNG TPA has begun registering email addresses of visitors supplied on the Arriving Passenger Card at the Jackson's International Airport in Port Moresby. Visitors will be emailed a survey link asking them for their participating in the survey.

2.28. 2014 PNG National Financial Capability survey

The national financial capability survey 2014[29] was aimed to develop a baseline measure of financial inclusion and financial capability for PNG. Its objectives include broad range of issues such as accurate assessment of the financial exclusion in terms of bank account ownership, transactions, savings, long term savings and credit by the households and develop household resources. The survey data was collected from 8 districts of Morobe and Madang provinces and includes 688 individuals from 359 selected households. Two other related studies were noted in the report. One, 2013 Financial diaries study in Port Moresby, Goroka and Kimbe and Two, 2013 Financial competence study in Port Moresby, Mekeo and Galley reach districts.

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[28] Source: http://www.tpa.papuanewguinea.travel/papua-new-guinea-tourism-promotion-authority/x,76,1,1,617,,/png-international-visitor-survey.html

[29] Web source: https://www.bankpng.gov.pg/.../PNG-Financial-Capability-Survey_1601939_Web-6No

3. Data Issues and Challenges

From the perspectives of both producer and consumer's, existing datasets suffer from following common limitations and challenges.

1.Supply shortage: Non-availability of data, both at the administratively aggregate and disaggregated levels, on key socio-economic and other indicators remains a challenge for Papua New Guinea. PNG's performance as data supplier is very poor not only globally but also relative to Pacific regional countries. This causes policies and programmes to be designed and implemented without timely and appropriate information. Even the limited available data are outdated and not used by stakeholders properly. This is because of poor quality control measures and survey instrument implementations associated issues inherited in the key phases of the statistical production cycle mainly data collection, processing, dissemination and evaluation. Some key surveys are less frequent, and their collection cycle is irregular and uncertain. Data collection in Papua New Guinea is very expensive but at the same time, some surveys fail to receive attention due to narrow coverage in terms of the survey scope, area and population coverage and representativeness. The large non-response rates for some key information collected in the surveys such as HIES reduces its quality and hence, usability. Another issue that affect use of PNG surveys is the methodological differences across waves and surveys. Significantly different measurement methodologies reduce comparability across waves, and across surveys domestically and internationally. This also is the main reason why some of the indicators are not placed in the external databases despite its availability for PNG.

2. Lack of public access and openness: Much of the surveys and data reviewed in this paper are not easily available for public access. This concern is also reflected in the report of the open data inventory (ODIN) 2016[30]. In this report, PNG is ranked 167 with overall score of 14%--

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[30] The ODIN assesses the coverage and openness of official statistics to help identify gaps, promote open data policies, improve access, and encourage dialogue between national statistical offices (NSOs) and data users. Openness scores are based on whether data can be downloaded in machine-readable and non-proprietary formats, can be selected by users, are accompanied by metadata, and are free to use and reuse. One point is received for fully satisfying the criteria for each element; one-half point for partially satisfying them; and zero if the criteria are not satisfied or data are entirely missing. The 20 data categories are grouped into three major categories: social, economic, and environmental statistics. Social statistics include population, health, education, gender, and poverty. Economic statistics include national accounts, labour, price indexes, government finance, money and banking, trade, and balance of payments. Environmental statistics include land use, resource use, energy use, pollution, and the built environment. Each category is scored on the elements of coverage and openness described above.

an average of a data coverage subscore of 16% and a data openness subscore of 12%. Report further suggests that PNG scores lower than the regional median across all three major data categories, namely social, economic and environmental statistics. Within the country, the highest levels of coverage and openness are on social statistics and the lowest levels are on environmental statistics. From data producer point of views, the real problems are limited skills and number of personnel involved at various stages of data collection, extremely expensive and limited physical storage and technological infrastructure. A poor implementation of Ten Year Pacific Statistics Strategy (TYPSS) has not been able to improve accessibility level in the PNG and in the Pacific in general.

3. Faulty Dissemination Process: While timely data dissemination remains a challenge for the entire pacific region, Papua New Guinea's performance is below standard. The time gap between data collection and, release of data and publications is on an average 3-4 years. Dissemination process does only include data and publications releases but also require publicity, networking and continuous interactions with the data users and policy makers. A faulty and limited dissemination mechanism discourages the users, limit the scope by reducing the benefit of using timely data for policy purposes.

3. Lack of data sharing platforms: Existing data and related publications in PNG are not shared widely within the country among users and other data producers. This makes it difficult for users and producers to find all the data at one platform. Lack of data sharing due to absence of networking significantly reduces visibility of the data and limit producer-producer and users-producers' interactions.

4. Under-utilisation: Existing data are not utilised properly and the limited use of the data hurts the relevance of the data. Limited data literacy and technical capacity (statistical, technological and policy), higher costs, lack of accessibility, poor quality, real time data availability and lack of evidence based decisions in the policy environment also reduce the demand for existing data. Apart from these, lack of integration of national data with shared external platforms such as Pacific Community website and databases[31] also reduce visibility of data and deter the demand for data.

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[31] www.spc.int/

4. Concluding remarks

In this paper, over 25 surveys, administrative and other databases were reviewed and listed along with its description. The analysis uses various national and international data agencies including PNG's National Statistical Office. Evaluation of some selected data is broadly based on its scope and coverage, frequency of collection, comparability with previous waves, quality of the data and how it contributes to the SDGs monitoring. Data issues such as lack of availability, public access and openness, timely dissemination, data information sharing platforms, and utilisation were emphasised. However, these challenges also provide tremendous opportunities for a cost effective, inclusive, and innovative framework for statistical production cycle.

This paper has limitations too. While most the usable official statistics related data were surveyed in the paper, this study has excluded data from private sectors and some critical areas such as environment, crime, agriculture due to lack or outdated data sources Also, not all the surveys and datasets are available for public uses. Thus, while this paper provides an overview of key official statistics and other key non-official statistics, a comprehensive gap analysis and recommendations are needed to strengthen the claim.

Despite these limitations, in view of the high cost of perception based policies, PNG needs to develop a strategy with all the stakeholders to prioritise statistics in its development agenda, develop human resource necessary to strengthen collection and dissemination of quality data. PNG requires to collect surveys at regular interval as well as consistent across time and population. Further, it needs to develop importance of evidence based policy and integrate statistics within government policy processes, create an open data platform where existing data can be viewed, discussed and used by researchers, and policy makers.