Availability, Accessibility and Utilization of Pacific Island Demographic Data – Issues of Data Quality and User Relevance

While ensuring that data are available, and available on time it is imperative to ensure also that they are of good quality – reliable (of sound quality) and valid (meaning that they do measure what they are meant to). This requires skilled and experienced staff in place, right throughout Pacific island countries and territories' national statistical systems, and not merely at the level of section or agency head.

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The Pacific region is comprised of 22 island countries and territories – featuring some 7,500 islands of which around 500 are inhabited-spread over an area

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of 30 million square kilometres and stretching from the Northern Marianas Islands in the north-west Pacific Ocean to Pitcairn in the south-east.[1] Representing an enormous diversity in physical geography and culture, languages and socio-political organization, size and resources endowment, some countries and areas such as Nauru and Niue, consist just of one coral island, whereas others, like Papua New Guinea and the Federated States of Micronesia comprise literally of hundreds of islands. Melanesia comprise large, mountainous and mainly volcanic islands, endowed with natural resources, rich soil and an abundant marine life. Micronesia and Polynesia, by contrast, comprise of much smaller islands and their natural resources are limited to the ocean; they mostly comprise of small atolls with poor soil, with elevations usually between one and two metres (Kiribati, Marshall Islands, Tokelau and Tuvalu). There are also some islands of volcanic origin with more fertile lands (such as Samoa, Tonga, the Federated States of Micronesia and the Cook Islands).

Although containing just 0.1 per cent of the world's population, the Pacific region is home to one third of the world's languages, testimony to an enormous cultural diversity, and to substantial social, political and behavioural complexities. This situation is most pronounced across Melanesia, where over 700 languages are spoken in Papua New Guinea alone, and more than 100 each in the Solomon Islands and Vanuatu. These vast differences are unknown throughout Micronesia and Polynesia, where one national language is the norm in most countries. There are distinct differences in social organization and cultural practices between the three broad subregions, even allowing for some variations within countries. For example, throughout Melanesia, social and political status and power are usually acquired on the basis of individual merit and effort. In most of Polynesia they are achieved on the basis of patrilineal descent. In Micronesia, the situation is more complex: on high islands and more fertile atolls, there are close similarities to the Polynesian system, whereas on less endowed atolls, age plays a more prominent role with political control traditionally exercised by a councils of elders.

In light of these sociocultural, biophysical, economic and political complexities it comes as no surprise to observe a rich demographic diversity in a regional population of just over 9.3 million people (SPC, 2007):

- In terms of population size, Papua New Guinea dominates the Pacific islands demographic landscape, accounting for two in three Pacific islanders with a population of 6.3 million people. It is the second largest population in Oceania, one third the size of Australia but 50 per cent larger than New Zealand;

- Population size ranges from 6.3 million in a country such as Papua New Guinea to around 1,500 inhabitants in Niue for example;

- Fertility ranges from 4.8 live births per woman to a low of 1.6, with some territories showing similar intraregional variations along ethnic lines;

- The median age varies from 18.6 to 33.2;

- Life expectancy for male varies between 53 and 73 years, and for female between 55 and 78 years;

- Infant mortality ranges from a low of 5 per 1,000 live births to a high of 68 per 1000;

- Annual population growth rates range from a negative -2.4 per cent to a high 2.7 per cent, with sustained net emigration largely responsible for the negative growth of less than 1 per cent throughout Polynesia, the Federated States of Micronesia and the Marshall Islands;

- While 3 in 4 Pacific islanders reside in rural areas, urbanization is becoming a major population and development challenge across the region. With 9 countries and territories currently have more than 50 per cent of their populations living in urban areas, with an additional two not lagging far behind.[2]

Against this backdrop of biophysical, cultural, social, economic and political diversity, it is readily apparent that policy development and planning throughout the Pacific region has to be truly population-based to deliver meaningful and sustainable development outcomes. People drive and benefit from social and economic development, they interact, with their sociocultural and biophysical environment, their everyday life, in turns impacts on resources availability and sustainable use for current and future generations.

Although it is increasingly recognized that people are the key drivers and beneficiaries of development and that population dynamics and resource utilization are interdependent formulating effective and meaningful development policies and plans is often hampered by a lack of timely, quality and relevant data and information – even regarding quite basic and non-controversial demographic statistics such as those pertaining to fertility, mortality and migration.

Availability, accessibility and utilization of demographic data

National censuses of population and housing provide the very foundation for demographic and social statistics, including education and labour force data, and many population-based development indicators for all Pacific island countries and territories. Some countries and territories have a household survey programme in place, undertaking periodic Household Income and Expenditure Surveys (HIES) or Demographic and Health Surveys (DHS) while all French and American Pacific territories have well functioning civil registration systems.[3] But for most Pacific island countries and territories, censuses provide the main empirical evidence for social and economic policy development and planning, and are the only source of reliable information on fertility, mortality and migration.

Table 1. Pacific island countries and territories, 2010 round of censuses

Pacific island country/area	2010 round of censuses	Latest available census report
Palau	2005 May (2010)	2005
Kiribati	2005 November (2010)	2005 [*]
Niue	2006 September (2011)	2006 [*]
Tokelau	2006 Tokelau (2011)	2006
Samoa	2006 November (2011)	2001
Tonga	2006 November	2006 [*]
Cook Islands	2006 December (2011)	2001
Fiji	2007 September	1996
Marshall Islands	2009 June	1999
Solomon Islands	2009 November	1999
Vanuatu	2009 November	1999
Micronesia (Federated States of)	2010 April	2000
Papua New Guinea	2010 July	2000
Nauru	2012 September	2002
Tuvalu	2012 November	2002

Notes: United States Pacific island territories undertake a census every ten years under the jurisdiction of the United States Census Bureau; French Pacific island territories undertake a census every 5 to 7 years, under jurisdiction of INSEE, France.

[*] pre-publication drafts available for all three countries.

All countries and territories in the Pacific have conducted a census during the 2000 world round of censuses – the only region in the world for which this has been the case. Eight countries have already completed a census since 2005, while in preparation for the 2010 world census programme, six of these same countries plan to undertake a second census within five years (table 1). In terms of accessibility to census data and information, outputs vary from country to country. They range from traditional census reports, comprising of an administrative section, a summary of key findings across basic census themes and a set of basic tables, to fairly comprehensive dissemination strategies, featuring a collection of distinct outputs and products, as well as an active and ongoing programme of dissemination and information management. This includes census data user seminars, online access to key demographic summary data and indicators via national websites and the Secretariat of the Pacific Community's (SPC) PRISM website,[4] comprehensive and fully interactive population Geographic Information Systems (SPC PopGIS), as well as extensive population data utilization workshops and policy dialogues involving policy analysts, planners and policymakers.[5]

With traditional census reports providing a good snapshot of a country at specific points in time, their usefulness is somewhat limited to planners, policy analysts and policy makers, who require more than periodic snap-shots and details, such as information about specific population groups at different points in time, in specific locations, pursuing different economic activities at different ages. Timely data are also required on births, deaths and migration, to understand the population dynamics, both affecting and resulting from specific social and economic development outcomes. Planners require access to census data at their fingertips, on their desktops, so they can pursue thematic enquiries in line with specific information needs and demands. Desktop based population GIS systems, such as those developed by the SPC and online census databases popularized by CELADE for many Latin-American and Caribbean countries, represent the high-end of census data accessibility.

Timeliness and thematic coverage impose some obvious limitations on census data use, which can be supplemented by administrative databases, such as vital registration systems and the cross-border capture of international migration flows. But as indicated earlier, only six Pacific island territories under the United States of America's and French jurisdiction currently have vital registration systems in place that can be used to derive reliable fertility and mortality estimates. While many of the smaller countries have made substantive improvements in birth registration over the past decade, the accurate recording of

births remains a problem throughout Melanesia, with death registration a challenge in virtually all Pacific island countries.[6] Recent experiences in the Cook Islands introducing a modest child allowance, and the Marshall Islands tightening up their administrative procedures and giving outer islands health authorities a greater role in the recording of births and deaths, show that simple and innovative measures can yield tangible dividends in timely and accurate coverage.

The regular undertaking of population or other multipurpose household surveys, such as Demographic and Health surveys, are an obvious complementary source of demographic data and derived population-based development indicators. Papua New Guinea conducted a fully-fledged DHS in 1996 and 2006, while Samoa carried out a more limited survey in 2002, with the aim to provide more reliable and timely information on births and deaths in these countries. A comprehensive regional pilot project is currently underway and managed by SPC, in partnership with the Asian Development Bank (ADB), AusAID and Macro International, and supported also by NZAid and the United Nations Population Funds (UNFPA), to test the suitability, effectiveness and sustainability of this methodology for the Pacific region.

While data availability and improved user access are obvious preconditions to data utilization, it has been our experience over the past two decades that simply making more statistics available to a wider audience without paying attention to user demand and absorptive capacity is an exercise in futility. Assuming that available demographic and other socio-economic data and information will automatically feed into the formulation of policies and plans is a fallacy, which is also detrimental to evidence-based decision-making.

The authors' experience since the early 1990s has been that paying greater attention to user demand in terms of content and presentation translates into greater data use. Also, the pursuit of a multi-pronged dissemination and communication strategy referred to earlier has had a greater impact on data utilization than the more "passive" dissemination of voluminous census tables and dense reports.

Absorptive capacity, that is both the ability and time to make use of existing data and information, is another challenge faced by many national statistical and development planning agencies throughout the region. Even the best developed and effectively delivered data dissemination and information management and communication strategies will be unsuccessful if intended or potential data users lack the skills to "read" and interpret data and statistics, are unable to articulate their data

and information needs, or in case planners and policy makers operate in an environment that does not embrace a culture of evidence-based decision-making.

An additional challenge for most statistical agencies to provide the very ingredient for informed decision-making, is their perennial struggle with securing and maintaining adequate human resources to cope with an ever increasing pressure to produce and process information. Apart from being chronically short-staffed,[7] many offices lack a critical mass of skilled and experienced statisticians, and experience ongoing losses of their most experienced staff to other government agencies or the private sector perceived to provide better overall working conditions. Much of the growing pressure on National Statistical Offices (NSOs) and other statistical agencies in line ministries to produce and process data and information appears to be external, with considerable lesser demand generated internally. Having been the traditional recipient of annual and quite extensive statistical questionnaires from various United Nations agencies, development banks and other developments partners, the "statistical response burden" on Pacific Islands NSOs and other sectoral statistical agencies has increased quite substantially in recent years, owing to a plethora of international reporting requirements, such as, those related to the pursuit of the Millennium Development Goals. The goals of the Convention on the Elimination of Discrimination against Women (CEDAW) and those of the United Nations General Assembly Special Session on HIV/AIDS (UNGASS).

Issues of data quality

Permeating availability, access and utilization is the issue of data quality and related aspects of timeliness. Following the 2000 census round, and the dissemination of demographic statistics and population indicators, there has been a growing concern about data quality, which have been reported to be not always of the highest standard in recent years. Whether real or merely "perceived as real" is largely inconsequential for data, as once out in the public domain, irreparable damage can be done, by even a single "wrong" figure, which can cast doubt on a country's or agency's entire data and information management system. The collection, processing, analysis and reporting of demographic statistics and indicators has made steady progress since the 1970s and 1980s, in some countries and territories.

However, there are three areas of immediate concern for the quality of Pacific Island demographic data and indicators: flaws in data collection, misunderstanding timeliness and ignoring context, and arbitrary dissemination and representation of official statistics.

Flaws in data collection [8]

Although it is recognized that no census or survey can be perfect, it is essential to do away, as much as possible, with errors, omissions and inconsistencies Professional best-practice in this context suggests detailed operational plans to be in place and quality field staff recruited and provided with comprehensive training. Also, careful data checks and edits need to be performed both during and after data collection and processing phases, with appropriate adjustments and corrections made prior to tabulating data, analysis and writing the report. While "not reported" or "not stated" categories are permitted in coding and classification, it is desirable to keep the number of such cases to an absolute minimum, so that they do not impact on the overall reliability and validity of the data under consideration. Along similar lines, internal consistency checks are a matter of routine data edits, to avoid reporting for example on 14 year old girls with 6 children or on octogenarians with surviving parents. From the 2000 round of censuses, as well as from many household surveys conducted in recent years, it transpired that detailed plans, comprehensive quality control strategies and data edits have either not been in place or have been regularly compromised owing to a combination of funding and time constraints. A failure to develop quality control measures and management strategies led in many instances to "coverage" and "content" errors.

During the 2000 round of censuses errors pertaining to population coverage occurred mostly as a result of a neglect of basics principles in conducting surveys, such as operating with complete and accurate data, census maps, complete dwelling or household lists, consistent differentiation between *de jure* and *de facto* residents, and consistent follow-up of absentees during census night. Census plans, which contain provisions for quality control strategies need to be systematically prepared and used to avoid short comings. But with many countries operating under severe resource constraints and without previous census experiences during the 2000 census round, simple coverage errors were not resolved in the field. To the authors' knowledge, Papua New Guinea was the only country to conduct a post-enumeration survey.

Content errors occurred most frequently as a result of incorrect reporting or recording of the characteristics of persons, households or housing units. In Pacific island censuses and household surveys, content errors are largely caused by poorly- designed questions or poor sequencing of questions, insufficient pilot-testing of interview forms and of enumerator performance, poor communication between respondents and enumerators, mistakes in coding and

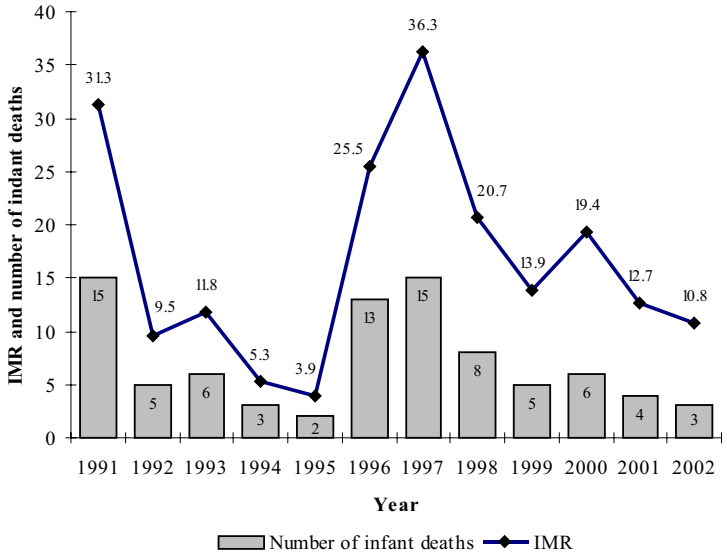
data entry, errors in manual and computer editing, and erroneous tabulations of results.

Problems related to population coverage and content errors are compounded by a lack of historical documentation spelling out all operational stages during past censuses and surveys, including manuals, codes, edit and tabulation specifications. In the absence of such documentation, new census and survey management teams find it difficult to be consistent with previous practices, and thus, major errors can be introduced.

Misunderstanding timelines and ignoring context

A second major flaw in the quality of demographic data and indicators lies not so much in the data themselves, but in the misrepresentation of demographic realities for the sake of timeliness. With demographic events, particularly chance events such as infant, child and maternal deaths subject to random variation (*stochastic interference)*, such data and derived indicators ought to be represented in multi-year (rolling) averages rather than as individual year indicators. This is a particular concern in small populations. In the case of maternal mortality, this caution is applicable in all Pacific island countries and territories but for Papua New Guinea, where the denominator (100,000 live births) is bigger than the total populations of 13 countries, and fives times that of the actual number of annual births in the Pacific island second largest country, Fiji, with a 2007 population of 832,000.

Figure 1. Number of infant deaths and infant mortality rate, Cook Islands, 1991-2002



Source: *Demographic Profile of the Cook Islands, SPC, 2005*.

The Secretariat of the Pacific Community has been reporting period, or multi-year averages as a matter of routine for all populations under 50,000, as well as for most populations under 250,000. Notwithstanding the intrinsic common sense of this practice, the authors have come across many situations where, in the name of timeliness, single-year data and derived indicators were preferred over "older five-year averages, or longer time-series, which were ignored altogether.

Figure 1, presenting the number of registered infant deaths and corresponding infant mortality rates for the Cook Islands, from 1991 to 2002, illustrates the inherent danger of reporting single-year demographic event data, and the disservice that could have been provided to the Government, had the 2005 Demographic profile simply reported a recent IMR of 10.8, instead of providing both a reference to the actual number of deaths (3 infant deaths in 2002), as well as a more robust multi-year average of 21 for the period 1996 to 2002.

Table 2. Births to teenage mothers, 1999-2006, Pacific island countries

Year	Numbers of births to females aged 15 to 19	Females aged 15 to 19	Teenage fertility in percentage
1991	**268**	**2,238**	**12.0**
1992	248	2,331	10.6
1993	267	2,428	11.0
1994	272	2,528	10.8
1995	263	2,633	10.0
1996	**269**	**2,743**	**9.8**
1997	261	2,856	9.1
1998	315	2,975	10.6
Census 1999	**319**	**3,128**	**10.2**
2000	299	3,200	9.3
2001	**281**	**3,273**	**8.6**
2002	**207**	3,335	6.2
2003	258	3,406	7.6
2004	253	3,433	7.4
2005	299	3,403	8.8
2006	**266**	**3,318**	**8.0**

Source: Haberkorn (2007). "Pacific islands population and development – facts, fiction and follies", *New Zealand Population Review* (forthcoming).

Accurate data on infant mortality is very important because in the absence of data amenable to direct or indirect estimation of adult mortality, demographers rely on infant mortality as the most readily available mortality indicator to select a model life table, in order to provide much needed age-specific survivorship probabilities and life expectancy estimates-data most useful for evidence-based planning of health and social services (including making realistic provision for retirement/pension funds).

The potential damage of ignoring time series altogether, as well as reporting raw numbers instead of ratios, is nicely illustrated in a recent example from a medium-sized Pacific island country, whose current annual health report identified a substantial increase over the past five years in the number of births to teenage mothers, from 207 in 2002, to 266 in 2006 (table 2).

While factually correct, the year 2002 proved to be an odd year out, which is reflected by extending the timeline back by a further five years to 1996. This revealed nearly the same number of births (N=269) , as did a further five-year step back in time, to 1991 (N=268). These figures clearly indicate a persistent number of births to teenage mothers over a 15 year period – yet, highlight annual fluctuations. What these figure do not show, however, and hence have the potential to send policy development on a wrong spin, is that teenage births are actually declining, with about the same number of births in 2006 affecting 3,318 women aged 15-19 (8 per cent), compared to an estimated 2,740 teenage women in 1996 (9.8 per cent) and 2,240 in 1991 (12 per cent).

This confusion, incidentally, lies also behind the difficulty faced by many policy makers to understand the concept and implications of the population momentum – that even substantial reductions, such as halving fertility rates in high fertility countries, will not have a miraculous, instantaneous impact when twice as many women today, have half as many births compared with women 15-20 years ago.

The danger of ignoring context in small populations poses another serious threat to data quality, in terms of providing misleading information. Annual spikes in infant or child mortality are often due to specific and localized disease outbreaks rather than being necessarily indicative of a general downturn in child health; a sudden surge in reported sexually transmitted infections (STIs) after major social gatherings like sporting events and art festivals are a perennial favourite, alike unusual variations in monthly birth rates nine months after such events. Usually these sudden increases are not indicative of a structural change pertaining to sexual practices or fecundity, but are merely highlighting a

temporary and localized change. In addition, dramatic variations over time, in maternal mortality rates in small populations for example, are often indicative of an unfortunate chance event and are not necessarily a reflection of prevailing reproductive health conditions (see Haberkorn, 1997). Regarding the latter, small population size does have its advantages for demographic and epidemiological surveillance and reporting, in that it is possible to contextualize specific individual events allowing portrayal of more realistic scenarios, such as when reported maternal deaths can be properly re-classified as deaths not caused by pregnancy or child-birth.

Arbitrary dissemination and representation of official statistics

Closely related to the previous emphasis on misrepresenting factual information is, it seems a quite arbitrary dissemination and portrayal of official statistics. A recent glance at nine major technical and development agencies websites, who are the most frequently sourced suppliers of policy and planning relevant population data and indicators, looking at only a selection of Pacific island countries, and focusing on the most basic and unambiguous population statistics, population size, exemplifies this malaise (table 3) (see Haberkorn, 2007). While not everyone may agree with the authors' projections, or with some of the underlying assumptions used for this analysis these projections serve as useful anchor, or "reference" points.

Looking at the Marshall Islands, for example, only WHO and the US State Department provide estimates similar to those of SPC while the others are between 15 and 20 per cent higher. The most likely reason for these discrepancies is possibly the fact that the massive net-emigration from the Marshall Islands from 1990 onwards, were not accounted for although it averages about 530 departures between 1990 and 1999, and exceeds 170 departures per year since 2000. Regarding Papua New Guinea, most agencies tend to under-estimate the current population by as much as half a million people, except for – WHO, the United Nations Population Division and ESCAP, the figure displayed in table 3 was obtained by applying a 4 per cent correction factor to the 2000 projection base population, in line with the reported undercount of the 2000 census in Papua New Guinea. Regarding the Solomon Islands, population estimates present a variation of about 50,000 below or above the SPC's most recent projections.

This cursory snapshot of how population sizes are reported across the international development spectrum is Symptomatic of the malaise experienced when reporting and using basic statistical facts in small population environments. It also highlights the implicit danger in leading to "outright policy follies down

stream, in providing the wrong denominator for many development indicators, such as crude birth and death rates, the calculation of population growth, per capita income and the establishment of poverty lines, health incidence and prevalence rates, as well as 'guiding' policy development, determining countries' development status (LDC) and their 'selection' as priority countries" (Haberkorn, 2007).

Table 3. Current national population size estimates for a selection of Pacific island countries

Pacific island countries	SPC Projection 2007	UN Poplation Division	Un Demo-graphic Yearbook	UNESCAP Population Data Sheet	WHO WPRO Manila	ADB (Basic Statistics)	World Bank (indicator Database)	US census Bureau	US State Depart-ment	CIA Factbook
Marshall Island	52,700	62,000 *2007*	62,000 *2005*	62,000 *2007*	56,000 *2007*	60,000 *2005*	63,266 *2005*	61,782 *2007*	56,417 *2005*	61,815 *2007*
FSM	110,600	110,000 *2005*	110,000 *2005*	111,000 *2005*	115,000 *2007*	107,000 *2006*	129,000 *2005*	107,862 *2007*	108,000 n.d.	107,862 *2007*
PNG	6,332,800	6,331,000 *2007*	5,887,000 *2005*	6,331,000 *2007*	6,288,000 *2007*	5,930,000 *2005*	5,748,000 *2005*	5,796,000 *2007*	5,800,000 *2005*	5,795,887 *2007*
Solomon Islands	503,900	495,660 *2007*	478,000 *2005*	496,000 *2007*	539,000 *2007*	496,272 *2006*	486,000 *2005*	566,842 *2007*	552,438 *2006*	566,842 *2007*
Vanuatu	227,100	226,000 *2004*	211,000 *2005*	226,000 *2007*	236,000 *2007*	221,507 *2006*	221,000 *2005*	211,971 *2007*	221,506 *2006*	211,971 *2007*
Samoa	179,500	187,000 *2007*	185,000 *2005*	187,000 *2007*	188,000 *2007*	179,186 *2006*	180,000 *2005*	176,615 *2007*	179,186 *2006*	214,265 *2007*
Tonga	101,400	100,000 *2007*	102,000 *2005*	100,000 *2007*	109,000 *2007*	101,100 *2006*	102,000 *2005*	116,921 *2007*	101,169 *2006*	116,921 *2007*

Note: UNESCAP commonly draws on data supplied by the United Nations Population Division, supplemented by national data; the CIA Factbook commonly relies on the US Census Bureau for its information.

The picture becomes more complex and confusing when it focuses on demographic indicators, or when a particular agency publishes several values for the same indicator for a specific country, based on the interpretation of different fellow agencies of a same database.

Challenges to improve availability, access and utilization of data

With all Pacific island countries and territories having completed a census during the 2000 worldwide round of census taking, and eight countries having already embarked on the 2010 round, the availability of census data and information is not an issue. Yet, key challenges remain in further facilitating access to data, data quality and timely reporting.

Civil or vital registration, particularly the accurate and timely registration of deaths, will remain a major challenge for most Pacific island countries for years to come. Without tangible benefits, it is unwise to expect rural folk to travel for miles, possibly incurring considerable travel costs, merely to tell an anonymous bureaucracy about the birth or death of a family member. With the vast majority of births in most Pacific island countries attended by midwives, nurses or traditional birth attendants, it is imperative to empower those health workers with the ability to register birth and issue a birth certificate. Death registration remains far more challenging, as deceased people in rural areas are usually buried on the day and without the need for a death certificate.

Collecting information on international migration should not be too taxing an issue, particularly in countries that collect international arrival and departure information. Bottlenecks remain in the management/administration of simple collection systems and access to proper resources (trained manpower, working computers, safe storage of forms at airports, regular collection).

Like with civil registration and international migration, maintaining up-to-date social and labour force statistics, such as annual education and labour force updates, is only possible in the context of an efficient administration and management structure, which constantly updates administrative databases (e.g. education; tax office), or has provisions in place for running a comprehensive annual household survey programmes.

While ensuring that data are available, and available on time, it is imperative to ensure also that they are of good quality – reliable (of sound quality) and valid (meaning that they do measure what they are meant to). This requires skilled and experienced staff in place, right throughout Pacific island countries and territories' national statistical systems, and not merely at the level of section or agency head. With databases compiled and maintained at much lower levels of professional rank and status, it is imperative that operating staff have adequate numeracy skills with appropriate training provided on an ongoing basis, and that quality assurance procedures are in place and adhered to – two areas that can be improved on further across the region.

Two key challenges remain regarding data access, both of which could be easily overcome with simple measures such as making data freely accessible to users, preferably electronically via national/regional websites, and providing such data and information in a format that meets the specific information requirements of different users. Such simple modifications to the management of public data will have immediate and tangible benefits: increased utilization of data – which are put

directly in the hands of users – increased data accessibility with users able to derive data/information demands according to their specific requirements, and cost-effectiveness. [9]

Such a policy change requires that three concomitant developments take place, initiated by Governments:

(a) Introduction of safeguards (data encrypting) that protect the integrity and confidentiality of data;

(b) Support to and nurture of a culture of evidence-based decision - making, ranging from policy-analysis to policy development and planning; and

(c) Pursuance of a change in management culture, where national statisticians are seen, and see themselves, as the custodians or managers of a public good, rather than as owners of data and information.

While ensuring that a policy framework is in place for good quality data being available and freely accessible to a wide range of users, it is equally imperative for data providers (National Statistical Offices) and key users (National Planning Offices) to develop comprehensive data and information dissemination and communication strategies, informing users about the availability of different products. This aspect is critical to data and information management in general, as it is a fatal mistake, as explained earlier to assume that putting data into the public domain will automatically translate into effective and sustained utilization of data.

Strategies to address some of these challenges

Addressing data quality has to be an integral part of an ongoing political commitment to a culture of evidence-based decision-making at national and regional level, and must come along with, a recognition that the provision of quality data requires a quality labour force as well as adequate resources to collect, process, tabulate, analyse and disseminate those data. It also requires considerably more attention paid to the need to translate data into information, as numbers per se have no informative value for anyone not trained or versed in extracting information in such ways.

Skill training, capacity-building is an ongoing process, particularly in the context of small Pacific island statistics and planning offices, which experience a high degree of staff turn-over, including regular "losses" particularly of the most trained and experienced members to positions associated with more prestige, better pay and career advancement opportunities in agencies, the private sector or in others countries. All stakeholders, including Pacific island countries and

territories' development partners need to recognize and acknowledge that capacity-building and capacity supplementation in specialized fields such as demography and population profiling, economic statistics, poverty analysis, epidemiology and health surveillance, are ongoing activities, representing existing demands that cannot be stopped at will.

Current activities involving the Secretariat of the Pacific Community associated with the 2010 round of censuses, as well as the Demographic and Health, and the Household Income and Expenditure surveys, illustrate some of these problems rather clearly: out of the eight Pacific island countries and territories that have already embarked on a census under the current 2010 world census programme, only the Cook Islands, Fiji and Samoa could rely on staff with previous census expertise and progress activities on their own, while some, such as Kiribati and Tonga started anew (with all senior staff but one in Kiribati having moved since the last census). Even with experienced and well-staffed offices on board, neither the Cook Islands nor Fiji have the means to undertake demographic analyses, depending on external technical assistance for such, and other specialized analytical and technical activities – assistance provided by the Secretariat of the Pacific Community's Statistics and Demography programme, in collaboration with other agencies, such as UNFPA, and more recently also the national statistical agencies of Australia and New Zealand.

Pacific island countries require continued technical assistance for undertaking national censuses and, to some extent, financial assistance. Regarding the technical side of things, census planning/operational design/management, data processing and demographic analysis remain key challenges, with a regional approach being a preferred option, in terms of cost-effectiveness, maximum impact and sustainability (sustaining regional, rather than creating a temporary national capacity in different countries). By contrast, experience has shown short-term national-bilateral initiatives to be less efficient, effective and sustainable.

Being more pro-active in disseminating quality data and information in a timely fashion, and to do so in a format that is both user-relevant and user-friendly, requires a paradigm shift in the way data producers interact with data users: where data producers seek the views of data users regarding their needs and demands, and where the latter articulate their priority data needs. Such data producer-user dialogues ought to represent an ongoing process, covering all stages of census and survey planning, including the development of comprehensive data/information dissemination strategies; not only containing different data and information products,[10] but also a staged programme of data release and data users workshops/seminars, to maintain the ongoing interest of users.

Conducting a regular census, and maintaining an ongoing household survey programme as well as administrative databases, are the responsibility of each and every Government. As regards census taking, this is enshrined in law in most countries, which means, at least inter alia, that the resourcing of censuses is a national responsibility. While most countries managed to fund at least the basics of their most recent census operations, either through recurrent national and/or external development budgets, ensuring adequate resources are available is of utmost importance to avoid downstream operational shortcuts impacting on the overall quality of census data, as discussed previously.

Expected outcomes – better policy, more informed planning

Following the emphasis throughout this paper on the fact that access to and utilization of high quality and timely data is essential for evidence-based decision-making in both public and private sectors, as well as across a broad spectrum of policy and development applications, expected outcomes on policy development and planning can be considered rather self-evident: the lack of data or timeliness, data compromised or of dubious quality can jeopardize both access to and utilization of those data. The latter is further compromised by the absence of analytical and communication skills to read and interpret numbers, and "tell the story", that is the ability to provide information in such a way that it becomes meaningful to intended and potential users, so that even the most evidence-averse politicians might one day share "the Australian Treasurer's view of demography as "sexy" (Haberkorn, 2007).

Key implications on policy development and planning present themselves. With censuses representing the very foundation for most Pacific island countries' national statistical and information management systems, it is critical that censuses are conducted at regular intervals, preferably every five or ten years,[11] and are well resourced and given high political billing.

To ensure that censuses collect data and provide information that is useful to key users (such as a country's policy development and planning agencies, as well as selected private sector agencies), producers-users committees ought to be established, so that they can provide advice on data collection and information management in general. For this to be successful, it is critical that these committees be ably chaired at the highest political level. Considering the key roles censuses play in a country's overall national statistical system, these committees ought to advice on the broad spectrum of public data collection and information management.

To give data collection and analysis, as well as information management in general the political cloud and status it deserves in the wider context of policy development and planning, agencies and staff involved, ought to gain commensurate recognition, and not appear at the lower end of budgetary appropriation and staff pay-scales.

Facing both high staff turnover, which is compounded with usually small office size, and generally low levels of resourcing at national level, regional capacity becomes of paramount importance, while the provision of technical assistance and training must be recognized as an ongoing commitment by regional agencies and their development partners.

Having addressed critical bottlenecks of data collection and information management,[12] and with adequate resources available for national agencies to fulfill their duties, it is of paramount importance that data collected and information produced be efficiently disseminated and communicated. Also, agencies involved in the process ought to have a more pronounced customer/client and stakeholder focus, a greater service than product orientation and ought to be guided by user-relevance and user-friendliness in all operations, rather than by tradition and by their usual inclination.

Finally, to be able to "tell a story" in such a way that it leads to better policy and more informed planning, requires a culture of evidence-based decision-making. More strategic population advocacy and partnershipcreation play a critical role in this connection, with a special focus on national policy makers and politicians.

Population advocacy in the broadest sense is essential to policy success. Development policy and strategies addressing the impact of unabated high population growth on sustainable social and economic development, of the impact of high rates of urbanization on regional and rural development efforts, the urgent need to develop effective strategies to address the Pacific islands' "youth bulge" – to name just three key population challenges faced by the region, all have very little chance of success without widespread support, through civil society and the political sphere. The Pacific Parliamentary Assembly for Population and Development (PPAPD) created in 1997, and the UNFPA-SPC partnership in developing measures to integrate population into national and sectoral policy development and planning, are tangible expressions of meaningful population advocacy. Nevertheless, one has to step up the pace, not just at the national level (through parliamentarians, as well as provincial administration and town councils), but also and most importantly, through concerted efforts in assisting policymakers and politicians to actually use the information received and translate it into action.

One has to recognize that not all politicians, in the Pacific alike elsewhere, have had the benefit of formal, tertiary or professional education, and hence do not necessarily genuinely understand statistics; the difference between numbers and rates, between rates and ratios, between estimates and projections, etc. To counter this, one has to be more proactive and help make the changes happen, which may involve helping design and administer population and development induction programmes for newly elected parliamentarians, and provide ongoing population policy debriefs for current members. If it is possible to successfully engage traditional leaders in week-long workshops on conflict resolution and dispute settlement, utilizing both indigenous and introduced techniques,[13] one can envisage a more active population advocacy along similar lines, addressing population and development issues through countries' modern leadership, such as parliamentarians, provincial administrators and town councilors.

Endnotes

1. This section draws heavily from Haberkorn, G. and others (1998), *Pacific Island Populations*, Secretariat of the Pacific Community, Nouméa.

2. Nauru, Guam, Northern Mariana Islands (>90 per cent); Cook Islands, Marshall Islands, Palau, New Caledonia (>63 per cent); French Polynesia and American Samoa (> 50 per cent). Applying recent inter-censal urban-rural growth differentials to Fiji and Tuvalu, could bring these two countries' urbanization rate in 2007 close to, or above 50 per cent as well.

3. The three French Pacific territories are French Polynesia, New Caledonia and Wallis and Futuna; the three United States of America Pacific territories are American Samoa, the Northern Mariana Islands and Guam.

4. Pacific Regional Information System; see: http:www.spc.int/prism

5. Several such activities have been jointly planned and implemented with UNFPA in recent years, at national and subregional levels.

6. Notwithstanding legal requirements in for many countries to register births and deaths, enforcement of rules is lacking, and access to registration facilities is difficult particularly in outer islands and throughout most rural areas, where three out of four Pacific islanders live.

7. At present, half of the Pacific islands national statistical agencies have ten staff or less, a figure which includes administrative staff and data entry clerks. Even larger offices with around 30 staff members tend to have only few people who have more than high school qualifications. Only Papua New Guinea and Fiji, and perhaps Samoa, have a critical mass of experienced staff.

8 For a more comprehensive account on challenges pertaining to population data capture and quality, see: Jorari and Haberkorn, 2004, "Providing context – reporting facts: upcoming challenges in

improving data capture and quality in the 2010 round of censuses"; International Association of Official Statistics satellite meeting, Wellington, New Zealand, April 2005.

9. Anecdotalevidence suggests that few, if any countries manage to recover the publication costs incurred on their products, or retain any profits (with incomes in most countries credited to the public purse, rather than the NSO budget).

10. For example, fortnightly/monthly release of thematic summary fact sheets, well ahead of release of full census tables, summary report, demographic analysis, population profile, thematic reports (e.g. education; labour force; agricultural activities, housing) – all posted on the NSO website – as well as the production of CD-Rom based population Geographic Information Systems.

11. Most established analytical and data presentation procedures work on the basis of five-year age-groups, cohorts and time intervals.

12. This should also see a review of national statistical legislation, which in many countries is several decades old and out of touch with technological developments such as electronic data dissemination.

13. See http://www.uq.edu.au/acpacs, for details on the current AusAID-funded and University of Queensland implemented pilot programme with the Vanuatu National Council of Chiefs on building/enhancing capacity of traditional leadership in Vanuatu.

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