

Interview with Nancy Elizabeth McBeth¹

Katherine M. Condon

E-mail: kcondoniaos@gmail.com



Ms. Nancy McBeth has been a member of the International Association for Official Statistics (IAOS) Executive Committee for the last six years and currently is the Advisor to the IAOS President. She began her career and interest in official statistics in her native country of New Zealand, where she spent over 25 years at Statistics New Zealand. There, Nancy undertook a number of operational and senior management roles with Statistics New Zealand; including leadership of the 2006 New Zealand Census. Following the 2006 New Zealand Census, she served as a technical advisor to the Statistics Centre Abu Dhabi (SCAD). Currently Nancy is a Consultant with the Statistical Centre for the Cooperation Council for the Arab Countries of the Gulf (“GCC Stat”), based in Muscat, Oman. Her particular responsibility and interest as a consultant has been on population censuses.

¹The views and opinions expressed in the conversation are those of the interviewee and do not necessarily reflect the policy or position of the Statistical Journal of the International Association for Official Statistics nor IOS Press.

Nancy’s qualifications include an MA in Political Science with a BA in Mathematics.

INTERVIEWER: Thank you so much for allowing us to interview you. Let us start at the very beginning and go back to your childhood in New Zealand. What was it like growing up in your country?

I grew up in a multi-generational family of migrants. Both my parents had migrated to New Zealand from Scotland, though at different times. That meant that apart from our beloved grandfather who shared our family home, our immediate family did not have many close family members living nearby. Partly because they were from Scotland, both my parents had a strong love of education. Even though neither of them had done very well through the school system, they both had a great love of reading. So, we had lots of books at home and our parents encouraged us to do well in school.

Reefton,² the small country town where I grew up, is on the West Coast of the South Island of New Zealand. It gets a lot of rain—about 2000 mm of rain per year [or about 79 inches per year]. It can be tropical, but also has cold winters with frost and sometimes snow. That means, that although we got a chance to do a lot of outdoor activities – such as taking dogs for walks and going out hiking with friends and other outdoors activities – it also meant that we spent many weekends indoors. Reading was a very important to pass the time

²Reefton was originally a gold mining town. It was the first town in the southern hemisphere to be lit by electricity. <https://nzhistory.govt.nz/keyword/reefton>.



as a child. It certainly gave me a good basis for future life.

INTERVIEWER: What was your education like before university?

In most of New Zealand, there is a good government school system and I went to the local schools. We had a small country primary school – equivalent to “elementary school” in the United States. This brought in kids from some of the surrounding farming areas. After that, I went on to the local secondary school as well.

I was one of those kids who really enjoyed school. I discovered quite early on that I was quite good at Maths, as well as some other subjects. We had good teachers, especially at secondary school. These teachers weren’t just from New Zealand, but from other parts of the world (U.S., U.K. for example) as well. When I was growing up, the school system for teachers meant that they had to do something called “Country Service.” Teachers had to do two to three years of service in a country town. As a consequence, country schools had a wide range of teachers. We were also streamed academically – in our case given the size of the school, classes had an “A-stream” and “B-stream.” In my year, the A-stream had 30 kids – with two-thirds girls and one-third boys. I think that, and research seems to support this, that the style of teaching when I was in school seemed to serve girls better than boys. But it meant that I grew up thinking that girls could indeed do anything because we certainly excelled academically. It may seem strange to some people now, but it wasn’t until I got to university that I discovered there were lots of young men out there who were actually interested in academic subjects. I hadn’t seen this growing up in my small country town environment.

One of the other things for me was, because I went to a small country town school, there was some subjects in which there weren’t teachers for the subject. So, we just did those subjects, in those days, by remote learning through the New Zealand Correspondence School.³ I guess in today’s version, it would be done by sitting down in front of one’s tablet computer using the internet. However, in my day “correspondence” was done through a mixture of radio⁴ and assignments that came by mail. So, we would wait for the mail to come with the graded assignment and to see how well you had done.

In my last year, there were only two of us in the class and we did all of our subjects by correspondence. Fortunately, we (my colleague and I) had a conversation before and agreed that we would do the same subjects. This made it easier for us. We were able to help each other and bounce ideas off each other. It did mean that we did learn very good study habits. By the time we went to university, we had developed very good independent learning habits. We were very used to learning on our own and did not need to have a teacher supervise us.

In addition, living in small country towns means you take on leadership roles. For example, I was Head Girl of the school in my final year.

INTERVIEWER: Looking back to our childhoods, we often find that a particular event or person had an impact on our later years. Did a particular person or event shape you into the person you are today?

My parents were very community-minded and despite limited formal education they took on leadership roles in different community organizations. When I think back on it now, that experience of assuming people will contribute to the community for the greater common good certainly shaped some of the things that I have done. This includes volunteer work with community organizations and local government in New Zealand, or more recently my involvement with the IAOS.

New Zealand and Australia share a very important day – April 25th – ANZAC day.⁵ It commemorates the involvement of Australian and New Zealand troops in

³https://en.wikipedia.org/wiki/The_Correspondence_School.

⁴Nancy said the radio is how she learned her “really bad” French pronunciation.

⁵<https://nzhistory.govt.nz/war/anzac-day/introduction>.

the Gallipoli campaign and the invasion of Turkey in 1915, during World War 1. Now the troops didn't actually have a successful invasion of Turkey, but that campaign shaped New Zealand and Australian sense of independence. Although we were independent politically, we still were strongly influenced by Britain. So, one of the things about that is that every year now in New Zealand and Australia you see people gathering at dawn and then later in the morning to commemorate the veterans and acknowledge this shared part of our history. There are also community services, with guest speakers. My parents were both heavily involved in what New Zealanders call the Returned Services Association – similar to the American Legion in the United States. This meant that when there was an ANZAC Day guest speaker from out of town or even, sometimes, out of country, my parents would host the guests for breakfast. I learned a lot about the bigger world and realized as a child that the world didn't just end at the boundaries of our town or even our country. Many of the people I went to school with didn't have those same experiences. So, when I think back on it, I think it was a combination of those things – the community spirit as well as being exposed at a young age to other people who had other experiences.

INTERVIEWER: Your CV states that you have a BSc in Mathematics from University of Canterbury in Christchurch, New Zealand and a M.A. Honors in Political Science also from University of Canterbury. How did that come about?

I think it was pretty evident when I was in school that I was going to be the first person in my family to go on to university. The teachers encouraged my parents that this was a good idea. I too realized that this was a good way out of a small town. While a small town was a nice place to grow up, it was not where I wanted to be permanently. When I finished secondary school, I thought I wanted to become a maths teacher, because I really enjoyed maths. So, I went off to university to do a maths degree. Early on in my degree I developed a friendship with someone who was doing a degree in political science. Thanks to her, I discovered a whole new world of subjects in university. I was able to do some political science papers as part of my BSc. At the end of this degree, I decided I wasn't quite ready to become a maths teacher and so went on to do my MA in Political Science.

This was an exciting time for New Zealand, as the country diversified its economy and moved away from a reliance on agricultural exports. My master's thesis was on the role of exporting incentives in diversifying the economy. These incentives were provided to businesses who were looking to export non-agricultural products. The thesis required me to use some of the maths skills, as well as my interest in politics and some of the economics that I had also studied at university. The thesis also required me to use statistical data and econometric modeling for the time. While some of the statistical data was from published sources, I also needed trade data from Statistics New Zealand. During the early 1980s, government departments had just started this process of the user pays for government services. This meant that if you wanted some non-standard government services, you needed to pay. In the case of the Statistics New Zealand data, this meant paying for trade data. So here I was as a masters student, [an economically] poor student, but I paid from my hard-earned cash to then New Zealand Department of Statistics for some of their trade data and showing my age, I entered this data into punch cards.

A slight break in the conversation here as we both laughed – myself, as a child I wrote stories on IBM punch cards. Nancy continued to say that until very recently she kept many of the punch cards of data to the amusement of her husband. Nancy added that it was just a couple of days before this interview she had heard that one can still buy punch card readers on eBay, but that it would cost about 20,000 USD.

I guess that this could be called my first introduction to official statistics. I had to actually buy some data to study.

I asked Nancy if she also had used paper tape for data analysis. She recalled that she had a couple of holiday jobs in which she had to use paper tape. However, these experiences led her to realize that she wasn't cut-out to be in the IT industry. However, we both agreed that these experiences with punch card data entry and paper tape gave us an intimate knowledge of the physicality of data which is not apparent today when one can just pull data off the internet without entering and cleaning it. She agreed and added that in those days, you had to think really hard about

- *what is it that I really want;*
- *how do I want to code it;*
- *how am I going to use it.*

In the early 1980s, the whole world of computing was really just starting to open up. Entering and processing the data for my thesis was a real introduction to this world. One also had to question whether one had the right skills to do things, like analyzing data and presenting the findings. This meant you also had to actively manage the data, including understanding the structure, the sources and what the data might mean. This is different from today where one is able to take tables and data off the web and you have no idea where it might have come from and how it got to the web.

There is a little bit of irony in this, because when I met my prospective in-laws, I discovered that both had worked for the Customs Office AND were responsible for the trade data that I used in my thesis. So, it gave us all something else in common.

INTERVIEWER: Turning to your professional experiences, you began your professional career at the Statistics New Zealand⁶ and rose through the ranks to become General Manager and a Member of the Statistics New Zealand Executive. What did you see as your greatest satisfaction? Is there any one project while you were at Statistics New Zealand that you feel you will be able to look back on and say that it was your favorite project? Could you give a little bit of background of the history of statistics in New Zealand?

New Zealand has a shorter human history than any other country. The precise date of settlement is a matter of debate, but it is believed that the first arrivals came from East Polynesia in the 13th century. It was not until 1642 that Europeans became aware the country existed. The original Polynesian settlers discovered the country on voyages of exploration. These people did not identify themselves by a collective name until the arrival of Europeans, and called themselves Māori, meaning 'ordinary'.

New Zealand was given the name by the Dutch explorer – Abel Tasman in 1642. It became a British colony in 1840, with a treaty between the Māori and the British Queen Victoria. The treaty however has slightly different meanings between the two languages. This remains a challenge for all people in our country today. It is also a reminder of the importance of really checking your understanding of terms.

In New Zealand's early colonial years, officials such as magistrates and policemen collected information about people and economic activities as they went about their duties. As with lots of the British empire, this was standardised and bound together in volumes known as 'Blue Books'. Annual statistical reports were published by the Government Printer from the 1850s.

These were replaced by the *New Zealand Official Yearbook*, which was released from 1893 to 2012. For much of this time, the Yearbook was the main means of communicating statistical information to the public. Many staff co-ordinated, updated and checked the material contributed by other government departments.

The post of *Government Statistician* was created in 1910, before a separate Census and Statistics Office was set up in 1913. In 1956, the Department of Statistics was formed. It was known by that name until 1994, when the name was changed to Statistics New Zealand.⁷

Statistics NZ employs about 900 people, according to their last Annual Report. The organisation has seen a major change in the role of women. When I started in the early 1980s, women were only just starting to move into management roles. Len Cook – GS from 1992–2000 encouraged and facilitated women into management positions. While a number of female colleagues had acted as Government Statistician, the first female Government Statistician, Liz McPherson was only appointed in 2013.

The Head Office is in Wellington, but it also has major offices in Auckland and Christchurch.

While at Statistics New Zealand, I had experience in operational, subject matter and methodology areas. I think my greatest satisfaction was building up a team of non-sampling methodologists in the 1990s. The context of this was that the government of the day had a real strong demand for evidenced-based decision-making and wanted an expanded range of statistical programs. In 1994, I was appointed to lead the Survey Design and Development department. We brought together questionnaire designers along with other non-sampling methodologists. Our team prepared and tested the questionnaires, surveys, and censuses across Statistics New Zealand. This included expanding our social surveys program, which had previously been pretty small, modernising the Population and Housing Census, as well as implementing administrative data into the economic statistics. Our question-

⁶<http://www.stats.govt.nz/>.

⁷https://en.wikipedia.org/wiki/Statistics_New_Zealand#History.

naire designers were busily doing things like developing things like bilingual questionnaires for our census, which was also moving to use OMR⁸ and OCR⁹ for data capture. Our small team of questionnaire designers also developed a series of cognitive testing techniques, used first in the census and then in the social and economic surveys. At the same time, we were also investigating and then implementing computer assisted interviewing for the social surveys. It was a busy time for a department of around 40 staff. The biggest satisfaction for me personally, when I look back on it, is not just the fact that we did this new work, but that we did this while building up a team at the same time as there weren't a lot of people within the country that had the skills. Many of these staff went on to take up leadership roles in statistics across government and the private sector in New Zealand and, in some cases, internationally.

As for my favorite project, this is where it is very hard, there are two great statistical loves of my life – labour force statistics and population censuses. I was there at the beginning when we implemented our first New Zealand household labor survey in 1995. as well as leading the subsequent major enhancements in 1990 when we doubled the sample size and moved the survey from quarterly to monthly outputs. One of my first jobs was to work on the preparation of the survey. This was the first new household survey for a long time. We needed to understand and implement the ILO standards, set up field teams, processing and output systems and then run the survey every week of the year. I was part of the team that developed the survey, including questionnaires and processes, ran training courses, developed IT systems with our UT team and prepared the results. I spent a few years on the operational side, running the field staff and also the processing teams as well. I learned a huge amount about working with people and a lot about geography of the country.

The other thing that I am also very proud of is the 2006 Census in New Zealand. I took on the General Manager role in early 2002. I followed in the footsteps of a good friend of mine and mentor Dr Frank Nolan.¹⁰

⁸OMR (Optical Mark Recognition) is a technology that allows the data from a multiple-choice type form to be read quickly and accurately into a computer. Special OMR forms are used which have spaces that can be coloured in (usually using a pencil).

⁹OCR (Optical Character Recognition) recognizes all the characters from the paper document, collects and stores them into editable document.

¹⁰Frank Nolan unexpectedly died 16 October 2012. He was serving as Editor-in-Chief of the Statistical Journal of the International Association of Official Statistics. An obituary is available at http://isi.cbs.nl/IAOS/aboutus/2012-FrankNolan_obituary.htm.

Following his long career at Statistics New Zealand, he worked for the Office of National Statistics (ONS) and was also a previous Editor-in Chief of the Journal.

Statistics New Zealand was going through a lot of change at that time. We had a new Government Statistician, Brian Pink,¹¹ who was a former President of IAOS (2005–2007) and he had committed, as part of the 2001 Census, that New Zealanders would have the option of filing out the census form online in the 2006 Census.¹² So, one of the clear specifications of deliverables for me [as Manager of the 2006 Census] was to deliver an online census solution for 2006. The New Zealand Census model at that time was enumerator drop off and collect, with households completing the forms themselves. Internet collection had to link in with this enumeration methodology. One of the biggest challenges was working out how we would make the Internet census collection work in practice this work and how would we integrate this into the field operations, because this is 2006 and it was quite different from now. The internet was not as pervasive. It was still all new to us. We were just moving into e-government and e-commerce. So, we really had no idea and we had to do quite a bit of testing, both in terms of methods and systems. We knew that our take-up rate, we hoped, would be about 10 to 15 percent mark. It actually came out to be more around 7 percent, BUT, the thing was that it worked. It was also really important that it integrated back into our field systems. It would have been a public relations disaster if field staff had knocked on doors for people who had filled out their form online.

Overall it went very well.¹³ It also meant that New Zealand was one of the first countries to use the internet in the main part of the operation. We did it in a cooperative way. At the same time, we set up an international working group across countries who were involved in the 2006 census – Australia and Canada. We also involved other countries, like the United States. We met about once a year and share experiences since we were leading up to the 2006 Census, and that would

¹¹https://en.wikipedia.org/wiki/Brian_Pink.

¹²To see the results of the 2006 Census – go to <http://www.stats.govt.nz/Census/2006-census.aspx>.

¹³A description of the experiences with the on-line census in 2006 can be found in Cullen R. (2008) New Zealand's 2006 Census Online: A Case Study. In: Chen H. et al. (eds) Digital Government. Integrated Series In Information Systems, vol 17. Springer, Boston, MA (<https://link.springer.com/book/10.1007/978-0-387-71611-4?page=2#toc>).

lead on to the next round of censuses. In our case this round was the 2010–2011 Census.¹⁴

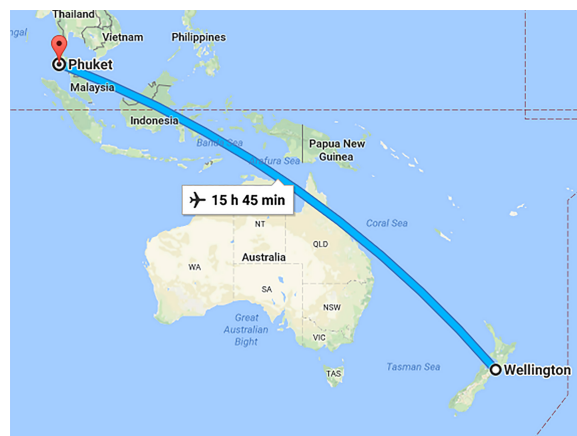
The other part of the Census work that I am particularly proud of was the work to improve the relevance of the census to users, especially those from local government. I was particularly conscious that the Census is one of the few times when official statistics provides statistics for small communities. However, sometimes Census results don't always tell a good story about small communities. Community leaders like good news – e.g. growth, but for small communities that doesn't always happen. Sometimes the Census is the only way in which communities get to know really what is happening/has happened. We had some problems in previous censuses where some community leaders may not have quite understood why the numbers weren't saying what they would like. So, we set up a team to work with local government across the country and specifically in communities where we knew that the population was declining. The Statistics NZ team established focal points in each local authority and provided them with information they could use in their communities. We met with the local authorities whose populations were declining and helped them understand the demographic reasons. As a result of our activities, the focal points and many of the local authority leaders became strong advocates for the Census and strong users of the Census data for decision-making. So, I learned the importance of working with communities, but also the importance of helping the local decision makers understand the facts, even when the news isn't what you would like.

INTERVIEWER: After the 2006 Census, you left the Statistics New Zealand to be Self-Employed Statistical Consultant. How did that come about? Could you tell us a little more about the types of services and activities you were involved in as a statistical consultant?

After a management restructure,¹⁵ Statistics New Zealand and I agreed that it was time for me to do

¹⁴Described in a recent paper coordinated by Arona Pistiner, The International Census Forum – One Example of a Cooperation Model (https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.41/2017/Meeting-Geneva-Oct/GE_41_2017_14_ENG_unofficial_correction.pdf).

¹⁵While still at Statistics New Zealand, but after the completion of the 2006 Census, Nancy became the General Manager Strategic Communication and a Member of the Statistics New Zealand Executive. In this capacity, she led the team responsible for the New



something different. I was lucky, as I did a secondment [temporary transfer] to one of our central government agencies and I learned a lot more about how the New Zealand government works, which was useful. I then took up self-employment as a consultant – one of my clients was Statistics New Zealand. However, previously while I was still at Statistics New Zealand, I had been representing the agency internationally, so I had done a lot of international work. One of my favorite highlights was doing some statistical work for the Statistical Institute of Asia and Pacific (SIAP).¹⁶ Among some of the work for SIAP was a workshop on statistical capacity building held in Phuket province, Thailand, which is a well-known holiday resort for folks from Australia and New Zealand. I still remember the flight into Phuket.¹⁷ I was the only person on that plane that had a laptop; everybody else was going on vacation, so nobody else was going to be interested in my working seat. [laughter].

During my time consulting, I also took the opportunity, to do some further education, and did a university

Zealand Statistical System, Strategy development, and the agency's relationships with Ministers, Internal and External Communications, and International Relationships. Also during this time, the team developed a more strategic approach to International Engagement, especially in the Asia-Pacific region. Following this for two years, she was the Inter Agency Change Manager for the State Services Commission, New Zealand. In this position, she led an Inter-Agency Change Management project which successfully moved a high profile set of government IT functions from one part of government to another.

¹⁶Projects that Nancy was involved in for SIAP included "facilitation of a number of workshops of Heads of NSOs in the Asia-Pacific region, as well as working with the SIAP Directors to develop a skills framework for statistics offices in the region. For more information on SIAP, see <http://www.unsiap.or.jp/>.

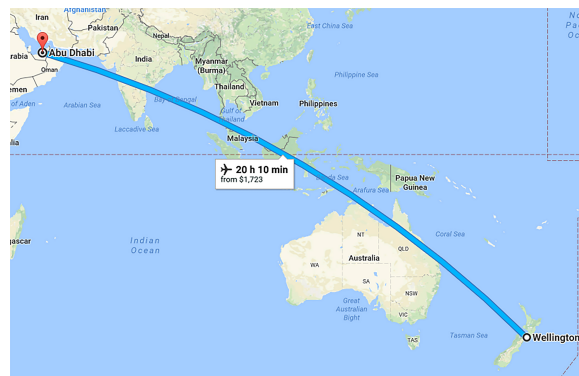
¹⁷Google maps shows that it is a little more than 13 hours from Christchurch, NZ to Phuket, Thailand.

paper on Pacific History, which is something I had always wanted to do. And then I moved on to Abu Dhabi.

INTERVIEWER: That’s a nice segway to my next question, you left self-employment to become a Senior Technical Advisor to Statistics Centre Abu Dhabi. That’s quite a change – geographically-speaking. How did that come about? Could you tell us a little more about the types of services and activities you were involved in this role as a technical advisor? Is there any one project while you were in this position that you feel you will be able to look back on and say that it was your favorite project?

Certainly, some of the work I did previously overlapped with my position as a (*Senior Technical Advisor to Statistics Centre Abu Dhabi (SCAD)*). Initially, my main job was to work with senior staff who were planning and organizing the Abu Dhabi 2011 Census. My job was to help set up a planning and monitoring framework. I was also providing technical advice to the Census Manager, who had come from other experiences in the Abu Dhabi government, and some other of his colleagues. SCAD had hired a team of Western expatriate statisticians, mainly from Australia and New Zealand, who were working and organizing across difference domains. We were supporting some of the technical work that needed to be done. In addition, we were building capacity, through training our local colleagues (i.e., knowledge transfer to help in the further development of survey planning and in technical design of household surveys). After the Census, I worked with the project managers for a couple of their household surveys – Labour Force and Household Expenditure and Income surveys.

My last job in SCAD was providing technical and strategic advice through their Strategy Department. We ran a project on the quality of administrative data and statistics. This involved getting the statisticians to use international tools, such as to assess the quality of the administrative data that they were obtaining from other parts of the Abu Dhabi government. For many of the statisticians, this was the first time that they had stepped back and looked at the data from the different dimensions of quality. In an environment where most of the folks were used to a top-down management style, this was also a little bit different. In this case the statisticians were doing the assessment, identifying the issues and then discussing the possible problems



and solutions with the manager. This provided a different way of thinking about how they were doing their job and it turned out very well.

But, I think the Census project was the highlight in many ways. It was a new project for the Statistics Centre. I used to think that doing a census in a 5-year time period was tight, but in Abu Dhabi we did it in 18 months. But that is sort of a standard in this part of the world where the focus is often heavily on the field work and working with communities. While I have a fieldwork background, I also come from a methodology perspective. So, I also helped people think about the need of improving things through testing and piloting new things. Initially, I found some skepticism for this perspective, but now testing and piloting is part of the way they do things at SCAD. So, I feel like I have made a bit of a difference.

INTERVIEWER: More recently, you are now a Consultant and Advisor to the Director General of the Statistical Centre for the Cooperation Council for the Arab Countries of the Gulf (GCC-Stat). How did that come about? Could you tell us a little more about the types of activities you are involved in this role?

I had heard about GCC-Stat¹⁸ in 2013 and was impressed with what they were aiming to achieve. I remember thinking that the Mission of the organisation – “Leverage the Power of statistical information to support decision making, research and dialogue within GCC nations” was something I would like to be part of. In 2014, the opportunity came to join the Centre. The Gulf region is a vital region for the world. It is also undergoing considerable transformation as it moves away

¹⁸<https://gccstat.org/en/>.

from reliance on oil and gas. It is critical for decision makers in the region to have quality statistical information, that they can trust and rely on. If statistics will be used to help the region benchmark itself with the rest of the world, the methods and approaches need to be based on international best practice.

In this position, I provide a range of technical advice and services to support of GCC-Stat. Key among those responsibilities are leading of the 2020 Harmonised Register Census project across GCC, as well as strategic and operational advice.

With regard to the 2020 Harmonised Register Census project, I provide strategic, technical advice to the relevant officials in the 6 GCC countries in the preparation, planning and implementation of the 2020 harmonised Census. This included preparing plans, training material, technical assistance, conducting workshops. It also included providing strategic advice to GCC-Stat management and governance board for the 2020 Census project.

Turning to the strategic and operational advice, I provide strategic advice on international engagement as well as supporting GCC-Stat in participation in international statistical activities, such as the UN Statistical Commission. I also support and mentor statisticians in the preparation of population and related statistical outputs.

INTERVIEWER: Over your career – so far – how has your international experience impacted your views on government statistics and how has it helped you in thinking in the strategic direction?

International experience helps you see the world in different ways – but also helps you distill what is fundamentally important.

Having worked in a number of environments and political models, I think that regardless of the political situation, decision-makers and communities need reliable and trusted information to make decisions. It is easy to think that it is something that is necessary in a democracy model, but reality, it actually is something necessary everywhere. It is also important to remember that some of the very basic principles of official statistics such as understanding users, applying appropriate methodology apply in all parts of the world. So, I think the things that I learnt as a professional statistician back in New Zealand apply just as strongly, but you've got to think how you are actually going to apply them. And then there is the issue on trust – How do

you go about building trust in statistics? That's the one that many statisticians and the world are still struggling with. This is one of those things that I keep thinking about and I am very conscious about in this region, but also world-wide.

Trust in official statistics is hard to gain, but easy to lose. As we live in a global world, loss of trust in statistics in one country or system can impact on the trust in official statistics in other countries. I think this issue of trust needs to be stronger on the strategic radar of all Statistics offices – whether national, regional or international. And it's something we all need to learn from one another. This is an area where the IAOS can be helpful. Our conference and the SJIAOS are mechanisms that we can all use to learn from one another.

INTERVIEWER: More generally, what are some of the challenges you see facing statisticians working in government settings?

Official statistics has enjoyed a long period of evidence based decision making which has driven demand. The demand picture is a little confusing. While there are signs that some of the traditional drivers for statistical information are declining, some governments appear to place less emphasis on evidence; there are other demands – including to support SDGs. These have a number of conceptual and technical issues which means that these demands are going to be challenging to meet – and it is not always clear who is going to use the indicators.

On the other side, we all see many other potential sources of 'information' for decisions. Much of the big data is held in the private sector – and unlike official statistics, there is not always the same rigor around publishing of methods. There are also access issues. And some of this data is difficult to use and manage.

While official statisticians may be ideally placed to use our skills, techniques and conceptual frameworks, there are also many other players.

I also worry about career paths for official statisticians. Official statistics is not something you learn in 5 minutes – it's something that comes from experience. And that experience takes time to build up. And different layers in an organisation need different experiences – as they encounter different challenges and tradeoffs. The tradeoffs you make as a first line leader are very different to the tradeoffs you make as the CE – but you need relevant experience. I look at many statistics offices around the world, and often their CEs are

parachuted in from a world of policy or research. While this provides a user perspective, which is key, it also means that the new CE is learning about official statistics on the job – while making difficult decisions. It also sends some interesting message to colleagues in NSOs – that the skills and experience they have and are developing, are not appropriate for leading the organisation.

INTERVIEWER: As someone who has crossed international borders and cultures to continue your professional development in official statistics, do you have any advice for official statisticians looking to move across cultures?

I certainly think that you have to go into this [moving across cultures] with your eyes open. One must first start off understanding why you want to do this. In my experiences, I think it is a chance, to apply skills and experience obtained in a different setting, but also to learn. You have got to go in thinking what can I contribute, but also go in thinking what will I need to do differently. I think I was extremely lucky in that I had spent my time working in a bi-lingual organization such as Statistics New Zealand, because Māori culture was a core part of who we were and how we worked. So, I wasn't just thinking about things in only an English western model. Thus, when you move to a different culture, you have to remember that you are living and working in a different culture and a different society. So, the more exposure and the more understanding you have, the better.

(For example, as we do this interview), we are one day away from entering Ramadan. So, that means for me that there are different things in the office, including being aware that colleagues are fasting during the hot summer months. But also, being aware that Ramadan is not just about fasting – it's a time for many people to spend more time with family, as well as the important religious activities. So, being aware of differences and treating occasions as an opportunity to learn.

I think the other thing that I want to bring out is that working in other environments is not just about applying techniques and statistical skills, but also an opportunity to learn about yourself and how you cope in different environments. Some people thrive in an environment where there is a challenge every 5 minutes, and other people need some stability and continuity. If you are someone who likes [stability and continuity], then

you need to find a way of getting that when you are living in a different culture/society. At the same time, if you are a person motivated by challenges, you might need to decide how many challenges you want to manage in your life. Your learning might be to discover your own self-coping mechanisms. You might find that your approach might not be the same as what you had back home, but that's okay.

INTERVIEWER: Turning to your involvement with the International Association for Official Statistics (IAOS), how do you see IAOS can have an impact on official statistics?

We (IAOS) were set up initially as the barriers were coming down between east and west Europe. We provide an opportunity for users and producers to discuss some of the issues around official statistics and have these conversations in non-official forums. Really this is not just for senior leadership folks, but also for folks who aspire to be senior leadership folks. We organize a conference every two years and sessions at the World Statistical Congress (WSC). The conference and WSC sessions are really important in that they allow a forum for people to talk about some of the challenges that impact on them and share knowledge and expertise. Just by the very fact that we exist and we have these events, we develop these linkages for people across different organizations. So, I think that is a very key role for IAOS.

We also do things such as the Young Statisticians Prize,¹⁹ as well as setting up the new Young Student Statistician prize.²⁰ These things give opportunities to young people; to actually show what they are doing and show their work. These are things that we do and which make a real difference. Every time I have talked with a winner from the Young Statistician Prize, it has been a huge pride, but there are also all sorts of intangible awards – meeting with leaders and ministers and all sorts of things like that.

The journal plays a critical role in supporting quality and technical work across the world of official statistics and helping us all develop professionally.

¹⁹For more information see: <http://www.iaos-isi.org/index.php/statistics-prize>.

²⁰See <http://www.oecd.org/iaos2018/>.

INTERVIEWER: In conclusion – one last question, I promise, how do you balance your busy work-professional schedule with a personal life and personal interests, such as you mentioned in your CV – gardening and fabric arts?

I can't do what I do without the strong support of my family, particularly my poor long-suffering husband, who gave up his career when we moved to Abu Dhabi, as well as my daughter (now living in London) who gives me advice. It is also about prioritizing, as well as the power of technology which allows one to multi-task, at least in theory.

Finally, finding things that keep you grounded. For example, if you have had the odd bad day at the office when you are out there gardening you are able to see the world in a different way. While you can get your frustrations out very easily, chopping away at your garden, no matter how hot it is or how cold it is!! But you can also see growth – often in unusual circumstances. For example, I love growing tomatoes. Growing tomatoes is a bizarre thing as a home gardener because the best time to grow tomatoes is also the time of the year that they are the cheapest in the market and they can be a challenge to grow. If you can achieve that challenge then you have done really well.

I also do fabric arts, mainly around knitting. On hot, hot days in the Gulf, I sometime work on knitting blankets for friends and family – although now I am beginning to run out of willing recipients. So, now I am

moving into how I can knit pictures. We visited the Shetland Islands in Scotland in 2016 and I came across some interesting ideas. From there, I started to produce some knitted pictures which I am playing around with. It is just something completely different and a bit of a break.

And finally, like many statisticians I have recently discovered genealogy. It's a whole new world, finding family across time and across geography. And I have discovered very recently, finding out that you and your husband have some common ancestors (albeit from the 1600s). But as an Official Statistician, it's also been interesting to use official data sources in different ways. The historical records are fascinating. The cause of death data from the 19th and early 20th Century helps you understand why standard classifications are so key. And as a genealogist, I am linking unit record data – but can see gaps in the data – missing census records, errors in date of birth and age – and don't even get me started on the quality of handwriting in the UK censuses in the 19th century.

INTERVIEWER: Thank you for the opportunity to talk with you about your experiences in the world of official statistics.

Thank you for the opportunity, and your patience with the Kiwi English!!!.