Consolidated Responses for the PAFPNet Discussion for the month of October 2015

Date: 15/10/2015 – 06/11/15

"Agricultural Statistics for evidence based policy making in the Pacific"

For the month of October, PAFPNet hosted the discussion topic themed, *"Agricultural Statistics for evidence based policy making in the Pacific".* Evidence based policy making requires effective, reliable statistics which are accessible to policy makers and other stakeholders. Statistics are important for informing decisions on national development priorities and for monitoring countries' progress towards achieving them.

This month's discussion was designed around key aspects following a regional workshop on agricultural and fishery statistics which resulted in the decision to develop a Pacific Strategic Plan. Three questions were underlined for the discussion that trigged an extensive and thorough exchange of views. Altogether 24 replies were received which makes the month of October a clear highlight in the history of the PAFPNet discussions. Thank you very much for participating!

It was widely agreed that the current limitations to incorporating data/statistics into agricultural policies and strategies are a lack of reliable data and a lack of capacity of policy makers to read and interpret those statistical data. Many discussants said that policy makers don't know the value of statistics so they don't demand them (or allocate sufficient funds for their collection).

Smart phones and tablets are believed to be technologies and innovations having the potential to transform the way data will be collected, used and disseminated in the future. The main restraints here are the availability of those devices in rural areas as well as connection to the internet. Radio stations thus might still be an underestimated useful tool in the Pacific area. So far, automated scanning processes of manually filled questionnaire sheets are already nowadays a big advantage in processing gathered data.

Communication of information from statistic is most effective when targeted and tailored towards an audience of interest, e.g. policy makers, scientists, farmers, business owners. The impact would even increase by repetition of the outcomes throughout various media. Depending on the group of interest, statistics could be illustrated as infographics (interactive or not), cartoons, pictures and tables, communicated through the media like daily or weekly newspapers, radio and television, internet and smartphones. Most discussants also highlighted the potential of GIS based technology and how visual mapping of data is a powerful and accessible tool for disseminating information.

This month's discussion has been specifically designed around key aspects of the workshop and will help inform ongoing actions on the development of a Pacific Strategic Plan. The assessments of the consolidated responses were gauged from the questions below:

1. **What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?**

2. **What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?**

3. **Presenting data is not enough to ensure people gain knowledge from the information. What do you think is the most effective way of communicating information from statistics? Please share examples of where data/statistics have been used well if you have some.**

For additional information regarding this query, please follow this link for the workshop documents and presentations:

http://www.spc.int/pafpnet/our-events/icalrepeat.detail/2015/10/05/2/-/strategic-planning-for-agriculture-and-fisheries-statistics-in-the-pacific-island-countries

Please visit the following link PAFPNet discussion:
http://www.spc.int/pafpnet/pafpnet/discussion-summaries

Responses from:

1. Mr Joseph Naesol, NSO – Solomon Islands

2. Ms Marlyter P. Silbanuz, Secretary for Agriculture – Micronesia

3. Mr Edwin Tamasese, Samoa Coconut Cluster, Soil Health Pacific Limited – Samoa

4. Mr Andy Keponge Yombo, NAQIA – Papua New Guinea

5. Mr Kevin Hosking, Senior Statistician Cook Islands Statistics Office MFEM – Cook Islands

6. Mr Jim Currie, College of Micronesia – Micronesia

7. Mr Manaia Halafihi, Ministry of Agriculture and Food, Forests and Fisheries – Tonga

8. Mr Leon Hickie, Ministry of Fisheries and Marine Resources – Solomon Islands

9. Ms Francesca Sungino, Palau Environmental Quality Protection Board – Palau

10. Mr Kinaai Kairo, Ministry of Environment, Lands and Agriculture Development – Kiribati

11. Dr Siosiua Halavatau, SPC Land Resources Division – Fiji

12. Mr Frank Lesa, Ministry of Agriculture and Fisheries – Samoa

13. Ms Kolianita Alfred, Ministry of Agriculture – Fiji

14. Mr Jeremy Korerua, NARI Chemistry Laboratory – Papua New Guinea

15. Dr William Tibben, University of Wollongong – Australia

16. Ms Sera B. Bose, Ministry of Agriculture – Fiji

17. Mr Clifton D Gwabu, National Agricultural Research Institute – Papua New Guinea

18. Mr Silupe Aiono, Ministry of Agriculture and Forestry – Samoa

19. Mr Pierre Wong, Census and Survey Data Processing Specialist at SPC – Guam

20. Mr Epeli Waqavonovono, Bureau of Statistics – Fiji

21. Ms Amelia Tungi, Business Statistics – Fiji

22. Mr Dean I. Solofa, SPC LRD - Fiji

23. Mr Henry Capelle, Ministry of Resources and Development –Marshall Islands

24. Mr Nicolas Monvoisin, The epi oil mill – Vanuatu

25. Mr Dean I. Solofa – Scenario Example

1. **Mr Joseph Naesol, NSO – Solomon Islands**

   What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

   1) **Lack of data,**
   2) **Policy people lack knowledge of how to use data,**
   3) **Lack of awareness and interest; don't know the value of statistics.**

   What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

New collection technology such as the use of smart phones/tablets. The process of scanning of census questionnaires have been used successfully in the 2009 population census of Solomon Islands. The process of new technologies improve productivity by reducing the time and resources used in the 'intermediate procedure' such as computer manual data entry.

   What do you think is the most effective way of communicating information from statistics?

Communication of statistics through the use of infographics, cartoons, pictures and through the media using graphs and pictures, and smart phones.

2. **Ms Marlyter P. Silbanuz, Secretary for Agriculture – Micronesia**

   What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

   1) **Lack of data,**
   2) **Policy people obtain data from statistic offices but not accurate numbers; lack of information available**
   3) **Lack of awareness and information to use**
   4) **People tend not to keep record of what they do neither to guess nor estimate most of the time**

   What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

The new collection technology such as the use of smart phones/tablets etc have never used.. . The processes of scanning of census questionnaires have not been used in the Federated States of Micronesia in this regards... The only process using computer manual data entry.

What do you think is the most effective way of communicating information from statistics?

The effective way of providing communication of statistics through the use of info graphics, cartoons, pictures and through the media using graphs and pictures, and smart phones will be helpful.

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3. **Mr Edwin Tamasese, Samoa Coconut Cluster, Soil Health Pacific Limited – Samoa**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1. **Stats are just not available**
2. **Many people using stats do not know how they should be applied to achieve the desired results**
3. **Many policy makers deliberately avoid them as they set benchmarks that can come back to haunt them.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

The internet and smart technologies/phones are become more and more common and readily available. Using these systems can allow the rapid collection of appropriate data. This data however needs to be related to a solid baseline so that it makes sense.

What do you think is the most effective way of communicating information from statistics?

The most effective way to present data from statistics is to integrate it into value chain frameworks. This makes it much easier to measure statistical impact of an activity or lack of it.

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4. **Mr Andy Keponge Yombo, NAQIA – Papua New Guinea**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

We face similar issues/problems as that indicated below by the Solomon's

1) **Lack of data,**
2) **Policy people lack knowledge of how to use data,**
3) **Lack of awareness and interest; don't know the value of statistics.**

For PNG I think the answer will be all three as provide by Joseph.

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

A technology based data collection in PNG, (NAQIA) rolled out in 2012 was an event based animal health data collection through a java enabled mobile phone. The idea was for NAQIA to identify provincial and district livestock officers or community based leaders like Peace officers, or Ward

Councilors provide the initial training on how to fill in the forms, after returning to their communities/districts monitor the health of the animals populations in their communities and report any significant event every week to the HQ in Port Moresby. An admin officer accesses the site and compiles the report for the technical people to make decisions. This project was initiated to develop endemic disease knowledge within the different agro ecological zones in the country and any new incursion of diseases will be responded to in real time for control etc

Problems we had: Because it was voluntary most reporters as we called them, failed to continue to report for their districts/wards. NAQIA provided PGK30.00 top up every month and when this top up did not go in on time this discourage the reporters. And I think we in NAQIA failed to properly coordinate the project.

Incentive: The reporters were not on NAQIA pay roll but their phones were registered on the NAQIA CUG group and were given PGK30.00 top up per month. The CUG system allowed them to communicate with any NAQIA officer anytime and can in fact report any significant disease event on real time.

The project is under review and hope it will reduce turnaround time for decision making in situations where it requires timeliness in decision making.

What do you think is the most effective way of communicating information from statistics?

PNG Answer: I agree with the Solomon Islands participant above.

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5. Mr Kevin Hosking, Senior Statistician Cook Islands Statistics Office MFEM – Cook Islands

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

- Report writers need to understand statistics information provided to them to be able to tell their story using it, whether is to do with fishing, agriculture, aquaculture or whatever sector, if they do not know what the numbers mean then they cannot explain it using statistics

- The design of policies and strategies need input from their stakeholders, the NSO is a stakeholder and can provide advice on what can enhance a policy or strategy – this advice could come in the form of an indicator which can inform or be the KRA of the policy or strategy. (lack of meaningful collaboration between parties)

- Not having the capacity to know that whatever data they have on hand is valuable and can be used to make decisions even if it is a small or minor one.

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Presently there are a lot of technologies available to transform collection of data, the most eye-catching being the use of CAPI software incorporated with GIS capabilities where one could interview a farmer on site and then pinpoint the location using GPS and plotting this on GIS maps,

this would show the spread of farmers across the island, and you can also identify what he/she is growing.

> What do you think is the most effective way of communicating information from statistics?

- As was mentioned by our collegue from Solomon Is. The use of infographics is a useful tool – it shows the statistics not only as a bunch of numbers but also using pictures as well plus you can use your creativity in explaining numbers to users who do not otherwise like to look at plain old tables.

- Using a GIS based platform also can highlight statistics – choropleth maps etc in PopGIS is an example.

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6. **Mr Jim Currie, College of Micronesia – Micronesia**

> What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

I am wondering how useful satellite scanning, photo imaging and other remote sensing systems might be for data collection especially for vegetation identification and estimation. I know we have used it for coconut and breadfruit estimates.

I also believe we need to use things like smart-phones for extension dissemination of all kinds.

> What do you think is the most effective way of communicating information from statistics?

People need to know what statistics mean in their own lives. Presentation must relate to their own situations. Knowing that a country imports 90% of foods purchased means very little until it is translated to mean that there is a market for what can be produced at home.

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7. **Mr Manaia Halafihi, Ministry of Agriculture and Food, Forests and Fisheries – Tonga**

I totally agree with Marlyter's point, as supported by Jim Curie, on the issue of lack of data as one of the top limitations to incorporating data/statistics into agricultural policies and strategies (Question 1). And that is why I mentioned data collections to be an issue here because of the high costs involves in collecting the data. There's plenty of data with the farming populations but data collection is a very expensive exercise. Remember, census involves the collection of data from all the population while surveys merely go with samples of the population.

> What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

My own experiences, as NPC, in running the current agricultural census for Tonga this year are as follows:

1. Lack of Funds:

I found Agricultural Census to be a very expensive exercise and required huge amount of funds for its implementation. The geographical remoteness and scarcity of living in most scattered islands of

the Pacific have made it looks unworthy, and raise questions against it, regarding the economical value in running of an agricultural census in the Pacific. It is very true that agricultural census in the Pacific always refer to overseas donors to finance such expensive project just because of the tremendous expenses involves. Most Pacific Island nations cannot afford to bear such tremendous expenses and therefore rated Agricultural Census as a low priority in their annual budgets but leave it entirely to foreign aids and donors to cover.

2. Human Resources:

The lack of skilled and qualified personnel in the Pacific to conduct agricultural census has caused a heavy reliance on overseas consultants and human resources. These overseas consultants have different experiences to what we have in the Pacific and they may lack the form and condition of agriculture in the Pacific so as to prepare the census accordingly. If the Pacific Island nations can afford to have qualified and skilled people to conduct agricultural census in their respective island countries, I definitely believe that such activities would have become a routine activities and incorporated into each governments' annual budget to conduct agricultural census in a fixed time interval (like 10 years of 5 years interval) while the gap between these years is to have annual surveys as to facilitate providing benchmark data for the next agricultural census year. I found agricultural census to be more complicated than other censuses carried out in the country, because it has to deal with land tenure and also having a wide scope of data to be collected. It requires our own Pacific resources that can prepare such huge agricultural census project with experiences in the Pacific agriculture and communities.

3. Consolidation of National Statistical Offices:

The lack of national consolidated Statistical Offices in the Pacific Island countries has contributed to the weaknesses of implementing agricultural census in the region. Most National Statistic Offices (NSO) are mainly assigned with define activities for financial planning purposes such as Population census and other necessary economic surveys (e.g. Household Income and Expenditure Surveys – HIES) with less regards to other sectoral and community activities, like Agriculture, Health, Education, etc. leaving them to do their own surveys and censuses. Although NSO assisted with the agricultural census but is limited. There is a need for a close collaboration between these national sectoral bodies and the National Statistic Office to conduct any census required from these national sectors. NSO may have qualified statistic officers while the sector bodies may have the qualified technical officers.

> What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

As we have now shifted and transformed into digital technologies, I believe that it is a great advantage to use digital technologies when implementing an agricultural census. The use of digital tools may reduce expenditures on papers used for the census. Digital tools are more versatile and consolidated. It records the data with instant storage to servers with less correction to be made. Data handling is far more secure than handling of recorded papers, which are more prone to lost when transporting or get wet. Digital tools are handy and always have camera incorporated, which can be used to take real photos of respondents and the farm. The use of Geographical Positioning System (GPS) tools provide information on more accurate area calculations and farm positioning. Tablets and Smart phones are definitely recommended for such agricultural census activities.

What do you think is the most effective way of communicating information from statistics?

Current use of internet technologies and social communications (internet, facebook, mobile phones, etc.) are fast and effective way in communicating statistical information to users. However, this is merely limited to those who are access and have internet connections. To add more on this, I would recommend mass producing CDs with all the detail presentations in it for distributions to users. All means of social media available, like daily or weekly newspapers, radio and television programs would be a fast and effective way of communicating information to ensure it is reached far out to every corners of the country.

The various ways how the data are expressed and presented are also important when people absorbed information. Using of Tables, Graphs, Distribution maps and pictures are effective ways in instant expression of the results and information from statistics. Television (TV) ads with necessary information to present would be an advantage in presenting results.

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8. Mr Leon Hickie, Ministry of Fisheries and Marine Resources – Solomon Islands

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

- Luck of data is one of the major limitations. There may be some raw data already collected but there are no proper database systems to process these raw data.

- The use of these raw data is one of the major limitations, analysing and how to covert data into reports is lucking. The communication and sharing of data is still a major issue within the government Ministries or departments.

- Valuing the importance of data still an issue. There is still an issue on the weather inshore Fisheries data should be incorporated into Agriculture or remain under Fisheries. Fisheries sector is still unsure which type of data to share.

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

- Suggested the use of smart phone and tablets (priority) might be more effective. This probably will reduce the difficulties. In Solomon Islands case both B-mobile and Telekom (communication companies) have wider coverage on the whole country.

- Scanning of questionnaires may be a faster way of inputting raw data into developed systems. (There might be some disadvantages).

What do you think is the most effective way of communicating information from statistics?

- Communication of statistics through the use of infographics, cartoons, pictures and through the media using graphs and pictures, and smart phones. The use of fortnightly or monthly internal newsletter, TV and Radio programmes. Regular seminar for concerned ministries.

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9. **Ms Francesca Sungino, Palau Environmental Quality Protection Board – Palau**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1. **Lack of Data**
2. **Lack of communication and collaboration between different agencies: Different agricultural data may be obtained from different agencies..**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

E-survey form and Computerized agricultural database (in-country) and a regional database that can be accessed via the internet by all member countries (website), and a dash of dedication from those involved.

What do you think is the most effective way of communicating information from statistics?

Interactive website targeting different age group and forgive me for being such an islander, but I still believe in community outreach and education as an easy way to reach out.

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10. **Mr Kinaai Kairo, Ministry of Environment, Lands and Agriculture Development – Kiribati**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

Data or figures are very important when devising work plan or strategies or policies as they help guide decisions to be sound and effective. I do not have any experience that limits my capacity to incorporate data into agricultural strategy. However, it's the other way around. I have limitation to make sound decisions or strategic plans without data. With data, we develop our strategy according to the data that we have. Without it, we make assumptions and anticipate activities on the ground to be effective or make an impact to the public.

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Access to mobile and internet in rural areas (outer islands) is a problem. A questionnaire is still very much accessible though it is costly. Using latest technologies such as websites are difficult to be accessed due to lack of computer access to all respondents, poor internet connections and slowness of internet servers. There are a few outer islands with mobile and computer access but connection and slowness of the server is the main constraint.

Presenting data to a few people which in almost all cases only to government officials or so limits the public's knowledge on the outcome of the survey. Though decisions are made by government policy makers or so, the public's knowledge and awareness of what the outcome of the survey is very important for their support to any policy or program devised to address such issues found prevalent in the survey.

Disseminating such information by radio is still the main mode of communication from capital island to other islands. Programming such information on CDs is another mode of communication and are more widely accessible to people both on outer islands and also on the capital island. As people always gather in their church groups or community to decide social and economic affairs for their community, these CDs can be disseminated to them where they can watch together the outcomes of the survey and can also make decisions/contributions to address them. In a way it can prepare them to government's undertakings/programs which are devised to address problems identified in the surveys.

What do you think is the most effective way of communicating information from statistics?

Refer to statement above.

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11. Dr Siosiua Halavatau, SPC Land Resources Division – Fiji

It is an accepted need now that we need evidence based policies. However, agricultural censuses are conducted every 10 years and population censuses are also every 10 years. They are staggered so they overlap by 5 years so we have a census every 5 years and every agr census collects vital population stats and every pop census collects vital agr stats. So in essence we should have good data during each 5 year period. *The problem is how many people consult these data in their works. Nationally in agr depts. – not many.* This is similar with use of soil survey reports.

There is also a problem with us in that we tend to quote what others quote and with time the original publication becomes a piece of household and regional work. But when we go back to the original publication – many times we find that it is deficient in the actual data needs we want but we kept quoting these publications without actually having read them.

National wide vs sample surveys is an issue but if we take our sample in a good statistical way like proportional sampling – we can be confident in the data collected.

The other issue is we tend to use now PRA tools to collect qualitative data and those who stuck by quantitative data tend to question these but if we ensure we use different methods and they come up with similar results then we have done good triangulation and our data is trustworthy.

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12. Mr Frank Lesa, Ministry of Agriculture and Fisheries – Samoa

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

Data & statistics can only be incorporated into policies and strategies when there are standardised policy tools/measures/controls such as the proposed PIC AgPER , Sector Plans , Ag Economic Forecast and so forth that will utilise them..there a numerous data sources and statistics related to agriculture but when there is absolutely no need for these data and stats to be analyse then they will become in time irrelevant, when i mean "no need" I mean decisions are not based on them.

Limitations

1.   MAf work force compromises of mainly science & agricultural educated personnel, with very limited opportunities in its structures for other important fields such as Economist, Administrations& Management, Governance & Public policy and other such fields. The scientist will always work as a scientist disregarding the administration and progression of the sector as a whole, therefore essential data and statistics that core variables in the agriculture development models are not assessed or incorporated, cause 90% thinks it's not that important

2.   Lack of Standardised policy tools that are essential for consistency of decision making by decision makers, such are the same for scientific research methodology standards, however when it comes to policy development less and less empirical analysis are being emphasis

3.   The changing and continued complexity of the agriculture development environment, the introduction of new methods and technologies , such as the WB e-voucher system for grants disbursement which really exaggerate agriculture expenditure, and political bureaucracy that can really hinder policies and laid out plans. Some data and statistic are best left untouched because it can cause political damage and international relations. Political decision may not always favour statistical analysis but a politician's own observation.

> What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Cell phone communication technologies are the most effective ways to get messages to wide targeted population. Small businesses advertising are now using mobile for Social Median websites to communicate information's to their clients and it is much more cheaper and effective than the thousands $ we spend on TV and radio ads, why is it effective , because the message is visually stored or audio store in phones , you don't have to wait for the ad to come on again in the next hour to try and read and understand it.

Such median also gives faster and clearer feedback on dissemination, a key indicator of communication effectiveness

The question of use is quite different from collection & dissemination.

Use requires a different form of technology as it is a process that requires a great deal of control & authority, thus a Sector wide information system needs to be establish to ensure the reliability and the quality of information as it may affect other sectors.

> What do you think is the most effective way of communicating information from statistics?

Through Education System, teaching our kids about Agriculture and its benefits at a very early age and up to college and tertiary level...across sector program with Health Sector Education Sector, Social Welfare Sector and Agriculture Sector, Understanding of Agriculture from a very young age will be of great advantage to development in the future , changing the mind set of people from a very young age and their attitude towards subsistence agriculture and any agriculture development will be acceptable and understandable as they grow.

It is a way that has been very effective in the Health Sector and how they changed peoples mind set to exercise daily.

Social Media like MAF Facebook or MAF website or Government Information Network, Documentary on Issues with the greatest impact, Brochures ...requiring an aggressive awareness program.

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13. Ms Kolianita Alfred, Ministry of Agriculture – Fiji

> What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

I take it that we now all have agreed that 'data/statistics' is crucial to formulating a good policy. That has been half of the challenge I guess, for most of the PICs, the issue was mostly talked about, but not seriously enough to make budgetary commitment into it etc. This has been a major challenge which I believe we are all now improving, simply talking about it attracts attention!

In addition, we like to benchmark against global and regional data, and whatever we tend to have locally tend to be treated as a good enough estimation, and some of us has been enjoying this estimation aura.

Specific and technical capacity is also a challenge we need to address. Every time there is a national Census, there is a significant amount of the budget to hire the technical expertise required etc.

> What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

At Agriculture here in Fiji they we use the CSPro software to insert and analyse data, GIS for mapping etc. Data collection remains a challenge due to our limited capacity in human resources and means of mobility to make a good coverage. It may be helpful if can use smart mobile devices to collect, verify and compile data etc. However, past experiences within the Ministry showed that users of these devices must be well capacitated and properly advised to be able to handle this initiative effectively (that is not for their own benefit and defeat the whole purpose).

> What do you think is the most effective way of communicating information from statistics?

It's not really about the means of communication, it's about 'how often' are we communicating it and to which target audience. Different means of communication works well in different areas and to different people so it depends. For example, while websites and platforms such as these will work well for us who can use it well to converse, it is definitely a no no in more remote places. So they need to listen more about it from the radio etc. The more people hear about things, especially in their favourite channel of communication, the more likely they are to actually take heed of things. So whatever strategies, programs or initiatives, briefing using stats/figures/ findings will create attention.

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14. Mr Jeremy Korerua, NARI Chemistry Laboratory – Papua New Guinea

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1. **Policy makers don't understand the data: The first and foremost limitation; many decisions are made without statistics simply because it is hard to understand, or is cumbersome, or does not seem relevant or important.**
2. **Data collection is not being done or is done poorly: Poor data is just as bad as no data, because if the information from the data is not representative or conclusive, then evidence-based decisions cannot be made using the data. Also, proper data collection is often a specialised skill which, for organisations that are limited in this area, makes it difficult to collect, interpret and include statistics into policy/strategy decision-making.**
3. **Too many levels between statistics and policy making: Too many hierarchical levels between statistics generation and policy makers, especially for organisations that have top-down/bottom-up hierarchies. The statistics information is passed up the hierarchy chain but gets diluted or simply stopped, never reaching the policy making levels.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Technology such as Smart phones , tablets, cell phones etc. can be used to collect data anywhere, anytime. The concept of "real time data" and its advantages is seen, where the data is collected in real time, interpreted and shared quickly so that policies reflect what is current hence addressing the perceived inaccuracies between policies and what is really occurring 'on the ground'.

What do you think is the most effective way of communicating information from statistics?

Effectiveness of communicating statistics will depend entirely on the target audience. Statistics should be simple and be easily understood by those who need it. Since target audiences can be categorised e.g., policy makers, scientists, farmers, business owners etc., statistics information should be tailored for target audiences. Mass media through tv, radio, newspapers, that is communicating through pictures and sound is best for large audience coverage, internet and mobile phones for technological advantage, and even word of mouth for small communities; all must be tailored to meet target audiences.

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15. Dr William Tibben, University of Wollongong – Australia

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

My experience may be dated but I have undertaken two research projects where I used statistics. My feeling was that there were significant holes in statistical data when looking at agriculture and employment in both coverage e and currency) some sats were outdated

Two big (and possibly related) issues:

1. the collection of statistics is not adequately supported by government - statistics departments are not supported with sufficient staff and equipment. As a consequence, statistics tend to be limited and outdated
2. Much economic activity in the Pacific occurs outside the formal economy leading to the conclusion that statistics may not accurately reflect economic and social life. If there is lack of faith in collected statistics the incentive for government to support collection of same is undermined (go back to point1)
3. The limitation in *incorporating data/statistics into agricultural policies and strategies* is getting a useful answer to the question what information is in demand by policy makers, agricultural officials and the farmers. I imagine they have different information needs (and capabilities to use such information). Apologies if I have misinterpreted the question.

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

There are some great Android based data collection tools.

What do you think is the most effective way of communicating information from statistics?

Ultimately people need answers to the questions that they have. The needs of the economist may be different to the needs of the farmer - consultation with all stakeholders appears as a necessary first step.

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16. Ms Sera B. Bose, Ministry of Agriculture – Fiji

1. limitations - Limited understanding of Statistics by those who formulate agricultural policies and strategies.

- **weak statistical system in place that fails to spearhead statistical training and workshops to relevant agencies to develop and enhance their statistics systems**
- **of course the most common one - LACK OF primary DATA; use of secondary data**

2. technologies and Innovations - Smartphones, tablets,   etc. - But there should be a lot of trainings and awareness highlighting mainly its importance before it is actually used.

3. most effective way - creation of Statistical portal on Websites with a lot of graphical and mapping presentation - POPGIS..

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17. Mr Clifton D Gwabu, National Agricultural Research Institute – Papua New Guinea

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1. **Absence of strong political and bureaucratic will**
2. **Absence of a central agriculture statistics office**
3. **Informal and under-developed nature of bulk of the agriculture sector.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

1. **Mobile applications**
2. **Weather services**
3. **Remote Sensing**
4. **Data Sampling Methods.**

What do you think is the most effective way of communicating information from statistics?

1. **Central Agriculture information serve office – much like tourist information desk in the city**
2. **Use the data to generate the most needed agriculture policies and plans.**

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18. **Mr Silupe Aiono, Ministry of Agriculture and Forestry – Samoa**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

- **Data & statistical is crucial to formulating a good policy but data does not seem relevant or important to everyone**
- **Lack of data, awareness & information to use**
- **Lack of faith in collecting of statistics/ and not enough data.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

- **Technology such as tablets, smart phones etc can be used to collect data anywhere and anytime. It can be easy to store and transfer info for a database work.**

What do you think is the most effective way of communicating information from statistics?

- **Use data to generate the most needed agriculture policies/ plans**
- **Effectiveness of communication statistics will depend entirely on a target audience and statistics should be tailored for target audience through emails, television, radio, newspaper. Etc.**

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19. **Mr Pierre Wong, Census and Survey Data Processing Specialist at SPC – Guam**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1) **Lack of understanding of benefits of agriculture statistics: This can be attributed to a number of different facets such as; the statistical planner's ability to covey statistics into a meaningful matter to the right audience or; unavailability of statistics in the first place.**
2) **Countries to unable to decide on its main goals in regards to agriculture statistics. For example: If a country believes that Food Insecurity is an issue for the country then the**

country must determine; what are the country-relevant indicators needed to measure Food Security? Then a design team can formed consisting of staff from the Agriculture as well as staff from Statistics to develop a proper methodology which include planning, collection, processing and dissemination.

3) **Lack of Inter-agency cooperation and data sharing. There seems to be a problem of some government offices unable or unwilling to share data and resources thus, hampering overall country objectives in deriving agriculture specific statistics..**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Do I really have to answer this? - If yes, I think you may have a copy of my presentations..

What do you think is the most effective way of communicating information from statistics?

- **Audience specific fact sheets**
- **Info graphics**
- **Indicator mapping (PopGIS-2)**
- **Twitter: Did you know tweets that showcase random statistical facts..**

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20. **Mr Epeli Waqavonovono, Bureau of Statistics – Fiji**

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

1. **Probably, the most key limitation is the availability of relevant data/statistics to inform agricultural policy making; however, if there is data available, the reliability and robustness of the data is often called into question.**
2. **In some cases, the data/statistics needed is with a government entity that feels that it has to protect the use of this information; preventing access to this information by potential users from within the same public service. This territorial approach to information is common in a large civil service.**
3. **Often, the creators of agricultural policies and strategies are public officials whose day jobs have them doing qualitative work most of the time. The use of quantitative approaches become harder to implement when everyday work does not require it.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

1. **Farmers are predominantly in rural areas, where access to the latest copy of the newspaper or to regular television news can be scarce or even difficult to get. Shortwave AM radio on the other hand is already incorporated into the daily/weekly lives of rural dwellers and farmers. AM radio has the capability to disseminate important information that a farmer might not have unless an agricultural extension officer visits the area. The potential of AM radio in disseminating data has yet to be realised by many Pacific Island countries.**

2. **Most government offices have the basic physical and software requirements to store digitalised data on site. There needs to be an clear and methodical system to how data is stored on these computers and eventually shared.**

3. **The use of mobile phone technology has enormous potential to impact the collection and dissemination data. Mobile phone platforms can be used as a portal for farmers to input key farm production and price information. If used well and compared with at-market information, it can provide policymakers with a glimpse of local agricultural markets rarely seen. The same platform can be used to provide farmers with data on market prices at different localities. This interactive feed of production data by farmers can also be helpful during major disasters to get preliminary figures on lost production.**

What do you think is the most effective way of communicating information from statistics?

Often, statistics are presented in aggregated figures which may be helpful to an analyst looking at macro trends in commodities/an economy but it's not necessarily the case with farmers and consumers. An additional level of disaggregation at districts or specific market locations would greatly increase the appreciation of information from agricultural statistics. People need to be able to draw connections with what may look like ordinary statistics, presenting information at a location specific level would do a lot to get to that.

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21. Ms Amelia Tungi, Business Statistics – Fiji

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

The three main limitations to incorporating data/ statistics into agriculture policies are:

1) **How agriculture are going to integrated into national statistical system � any platform set for the stakeholders to work together.**

2) **In terms of identifying the set of core data collected which both [Ministry of Agriculture& National Statistical Office] benefit. And cost sharing the costs involving in terms of data collection.**

3) **Sustainability of agriculture statistical system in collaboration with statistical capacity buildings.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Technologies and innovation that I believe that have the potential to transform the way we collect, use and disseminate data is using tablets for collections of data from the fields.. Because it save time, convenient in a way that all data collected from the field are straight away received in the office, saves money in purchasing and printing of questionnaires and other related costs involve..

What do you think is the most effective way of communicating information from statistics?

1. Use the number in the tables - make it easy for your audience to find and understand numbers within the tables

2.   Use charts - can be used to illustrate patterns in a large amount of data or to communicate a key finding or message

3.   For example Fiji Bureau of statistics: we currently use tables, graphs, charts, flow diagram to through explain or get the message across to users in our quarterly and annual releases..

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22. Mr Dean I. Solofa, SPC LRD - Fiji

> What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

Working backwards, three limitations to incorporating data/statistics into agricultural policies and strategies that I see are:

1.   *Availability of agriculture sector data is poor:* Currently there is little data available from the agriculture sector that can be usefully referenced that is:

a.   Easy to access

b.   Easy to use

c.   Existing in a system that is consistent across a number of branches of the sector

Before considering any of these though, questions to me are: do officers and technicians in the field know what data is needed and should be collected, and is there a systematic way of collecting this information in a reliable and consistent way?

2.   *Data capture systems likely need some review:* National systems for information and data collection do exist e.g. national agriculture census, from which the majority of agriculture sector specific information and data are sourced. How often, or the content of the surveys, that the system collects likely needs review and revision now and then, and depending on the specialist interest, there is always a desire to want more specifics added in to the surveys. There are limitations of course as to how much these systems can include to collect without making it an impractical or unwieldly task to execute. From a regional perspective to assist with monitoring and evaluation, a standard system should be considered. I happily declare no familiarity here with this specific area, so will also remain to be happily updated.

3.   *Cross sectoral support systems* across the agriculture, statistics, planning sectors of government to share resources and expertise for the use of data/statistics in monitoring, evaluation, and development of Ag & Forestry policies and strategies: This is less specific to data and information and its capture, and relates more to the ideas development, and its sharing and management, and envisioning of issues of a sector that are current and future, so as to develop the WHY part of what you would want to collect and use data and information for in the first place. This is not specific to any sector, but is an important stewardship type exercise across different disciplines, expertise and sectors, that helps say, the Ag and Forestry for example as a sector, to be as all-encompassing of key issues so as to be able to plan as effectively as possible. An advance step to this system, would be its linkage to a policy decision support system that could provide

policy makers with a scenario based on evidence based, cross-sectoral integrated data and information.

4. *Human resources and capacity:* **Data and information management in the modern world has unfortunately become more specialized but also more requiring of everyone within a system to have some level of knowledge on. Training and development of existing human resources will be a major requirement to modernize existing archaic systems in the Ag and Forestry areas, at national and perhaps regional even, so that a persistent and consistent information knowledge management system (that incorporates both evenly developed technological and human components) and process becomes part and parcel of the sector moving into the future. It is good that the PAPP project will be undertaking aspects of this in the countries..**

> What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

Modern ICT systems today provide a great opportunity to provide the technological side of the data and information collection, utilization and dissemination process. While solutions can still be expensive e.g. a common information database that is shared across a geographically dispersed set of information system nodes might require a mix of more than one technical communications solutions (e.g. use of a WAN system that incorporates a microwave network and LAN networks sharing multiple servers, desktop and other input devices), these should be seen to have a high return of value against a gradually decreasing overall cost of initial investment.

Using satellite imagery technology (e.g. Landsat imagery) and incorporating hi-res mapping technology such as LIDAR, and coupling research modelling, etc. are high value potential solutions that take planning down to a dynamic process for applications such as food security evaluations in a disaster in a specific area etc. Even for standard M&E for resource management use, these have high value in application. Meanwhile, as others have also mentioned, incorporating cellular networks and cheap and efficient (smart or non-smart) phone apps for use by local farmers, middlemen, markets in an agribusiness ecosystem provides opportunities for real time economic decision making power. Some of these are described well in experiences other developing regions around the world, and it is good to know that there is growing interest effort in some Pacific countries by the private sector.

The current limitations I think to the use of better technology is obviously the high costs in procurement, implementation and training of these in the first. So perhaps even more creative solutions to these possibilities will be needed to be grown locally or regionally, or even the arrangements to procure and implement these systems across a number of interested countries. The high value and opportunities that academic institutions have in this area thus cannot be understated.

It should be cautioned that a technological solution is not the entire solution to better information and data, nor even a first consideration. That at times, based on a simple evaluation of an existing information system, just improving the way information and data is better accessed and shared by people within a ministry/department and across to partners and stakeholders can also provide improvements without any technology invested. Technology consideration should only come in once it's fit and form and role in an information system is considered.

What do you think is the most effective way of communicating information from statistics?

As a Pacific community of practitioners working in this important sector, we can always stand to learn more from the stories of simple successes in the way information and data has been used to make decisions that lead to better decision making that leads to better outcomes for all. Logging and communicating these success stories as 'proof' for decision makers to invest in the importance of information and data being used in the agriculture and forestry sectors, is obviously important. The proof is, as they say, in the pudding; there is no better demonstration (of the value of better decisions made from better information and results) than in having the information and data to show the resulting improved/improving indicators!*

*please see the scenario example at the bottom of this document.

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23. Mr Henry Capelle, Ministry of Resources and Development –Marshall Islands

What, in your experience, are the top three limitations to incorporating data/statistics into agricultural policies and strategies?

- **Like other countries one of the main limitation is lack of data**
- **Limited fundings and personnel to collect data/statistics and reliability of transportation to the Outer Islands to perform this activity...**
- **Sharing of information is another problem within the Government as well as to the Public.**

What technologies and innovations do you believe have the potential to transform the way we collect, use and disseminate data and why?

The most innovative way nowadays in order to collect or provide good data and statistics is to have connection to the internet including a well set up data and statistics office and statisticians. That will be the case to have accurate information collected.

What do you think is the most effective way of communicating information from statistics?

The most effective way to share these very relevant information is through the newspaper/media/awareness materials/census reports/community consultations and other means of making sure that the whole country is fully aware of its own data and statistics.

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24. Mr Nicolas Monvoisin, The epi oil mill – Vanuatu

I have been thinking a lot about this as a member of the vanuatu Livestock Industry work group. We face the same issue here there is no data and no one wants to fund a general agriculture census (aid, govt…)

The only solution that sounds possible for me would be to create a certification, my idea was just for vanuatu but it could be done all over the pacific.

Let's say we create a "pacific sustainable agriculture certification" approved by major countries (US, Europe..) and get funding (EDF..) to certify all farmers in the pacific country by country.

At least all agricultural actors will be will to participate and give all the data as they win a certification for free. The advantages I can see in this:

-   *for the farmers/ag sector actors:*

    the pacific growers are finally recognized as trying to sustainable and respectful of the environment (which they have always been but no papper to prove it)

    This baseline certification if designed and thought properly gives them all the basic documents to short track other certification such as organic, fair trade etc…

    Push them to be more efficient and accountable as they have to renew their certification

-   *for the governments, donors , SPC:*

    they get a perfect picture/senses of agriculture activities..

    Make that certification renewable (even just by mail) every year you can actually track and analyse the changes in pattern of agriculture and agribusiness from region to region and country to country.

    Like that the pacific as one of the best monitoring tool of any agriculture in the world. And the SPC would be the the perfect body to give and maintain that type of certification.

25. Mr Dean I. Solofa – Scenario Example

Perhaps for an example scenario from a recent experience:

Problem: **I would like to find out what the gender dimensions and perspectives of the agriculture sector is across a few Pacific countries. I am interested in this so as to gauge gender based responses to food security threats of climate variability and change impacts (e.g. severe drought).**

I have found **that a lot of agricultural statistics is not gender disaggregated at national level, or at least has been in manual records, but has not been sorted as such electronically (good news is that there is some effort underway!). Also, exact climate variability/change/extremes impacts data (sample yield and productivity, market quantity and price, etc.) on crops (variety and type), livestock (species and variety), forestry etc., is similarly difficult to find and will entail sifting through old paper records, or locating an officer who was present at the time for his/her expert but likely subjective view. In contrast, I have access to high resolution historical meteorological data, and relatively well developed climatologies of parts of the island my study is taking place in.**

I see **two immediate costs to a decision or strategy that I would like to devise were someone to ask me to provide a view and possible solutions for the forecast (and incoming!) El Nino drought in 2016. The first (for both gender data and extreme drought impacts data) is the time delay obviously; searching for and locating older physical records, and then digitizing these will take some considered effort, and the larger the sample size the longer the time investment in this first process. Secondly, there is a cost to the precision of the advice that can be given; aside from the obvious error in rushing the time cost, the lack of key datasets, or availability of poorer proxy/substitute data can lead to larger margins of error and the introduction of assumptions about the problem in question.**

As a result of this situation (which I hear tends the be the norm often for the sector, so I'm told), I will end up providing in essence, a time-delayed assumption. But if time were not a factor (in that we planned in well advance, which might not be a real world scenario), then we could possibly provide a well referenced and strategic piece of technical advice, which is what we should always want.

The question then I would like to pose is if we have been using assumptions in our plans to date, or well referenced technical advice. I am putting this question rather simplistically of course, but I think it is to underscore that having ready information and data is critical, and that having systems that do this should matter to everyone in the sector. But also in reflection, that the Ag and Forestry sector has no choice but to do this as the future of natural resource management continues to

become more integrated with others and as a result, more complex for decision making, and because Agriculture and Forestry still has as its core a key role in the livelihoods of the Pacific's increasing population.

Most importantly: We're not distinctly discussing data in some of the responses although I think we should devote an entire discussion to this as a primer. Data doesn't just magically appear. Someone, or something, has to collect it first off from somewhere, somehow. Defining data, where it is created or collected from, having a systematic way of collection, are the basic considerations before even thinking about how we want to apply it to help guide a decision to be made. I come from a meteorological services background where data and data information systems are the running backbone upon which weather and climate information systems are based. Before you get that oft dismissed weather forecast you hear over the radio, lines upon lines of data has been collected, quality controlled, analysed, and fed into a model that a human weather forecaster then decides upon as forecast information that then gets sent to a radio station or newspaper or website. In a similar way, the agriculture sector must think and design carefully, a base system for the collection and monitoring of data far before it even considers its use in decision making applications. Naturally, the base system will have its checks and balances for quality control as 'rubbish in, rubbish out' as another commenter has already highlighted. Do we have that base system for data collection in our agriculture/food security sector? If not, where is the data we currently are using coming from? It would be interesting to see answers to these questions as follow up.