Agriculture Data

Report on a scoping study in six Pacific Island Countries

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Sub-regional Office for the Pacific Islands

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Acronyms

AAACP	All ACP Agriculture Commodities Programme funded by the EU
ACP	Africa, Caribbean, Pacific
ADB	Asian Development Bank
AusAID	Australian Agency for International Development
CBS	Central Bank Samoa
CBSI	Central Bank Solomon Islands
CDA	Coconut Development Authority
CEMA	Commodity Export Marketing Authority
CPI	Consumer Price Index
CSP	Community Sector Program
DHS	Demographic Health Survey
EHPU	Environmental Health and Preparedness Unit
EU	European Union
FACT	Facilitating Agriculture Commodity Trade
FAO	Food and Agriculture Organisation of the United Nations
FAOSTAT	FAO Statistics website http://faostat.fao.org/default.aspx
FBS	Food Balance Sheet
FSM	Federated States of Micronesia
GIS	Geographic Information System
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
HIES	Household Income and Expenditure Survey
HS	Harmonized System
IMF	International Monetary Fund
MAFFF	Ministry of Agriculture Forestry, Fisheries and Food (Tonga)
MAL	Ministry of Agriculture and Livestock
MDGs	Millennium Development Goals
MELAD	Ministry of Environment, Lands and Agriculture Development
NCDs	Non Communicable Diseases
NMTPF	National Medium Term Priority Framework
NSO	National Statistics Office
PACER	Pacific Agreement on Closer Economic Relations
PFTAC	Pacific Financial Technical Assistance Centre
PICs	Pacific Island Countries
PIFS	Pacific Island Forum Secretariat
PRISM	Pacific Regional Information System
RAMSI	Regional Assistance Mission in Solomon Islands
SBS	Samoa Bureau of Statistics
SDS	Strategy for Development of Samoa
SINSO	Solomon Islands National Statistics Office
SITC	Standard International Trade Classification
SoNAIS	Solomon Islands National Agricultural Information System
SPC	Secretariat of the Pacific Community
TCP	Technical Cooperation Project
UN	United Nations
UNDP	United Nations Development Programme
VCMB	Vanuatu Commodity Marketing Board
VNSO	Vanuatu National Statistics Office

Executive Summary

Accessing reliable data on agriculture production, marketing and trade presents a major challenge in developing and monitoring appropriate policy interventions in the Pacific region. This is despite the fact that the agriculture sector still remains the main source of livelihood for the majority of people in the small island countries and provides products which constitute the bulk of merchandised exports. The general unavailability of data on the sector means that impacts of policy interventions aimed at improving levels of food security, and agriculture based development more broadly, are poorly understood and that policy is generally based on perception rather than evidence.

This scoping study was carried out to assess the capacity in six Pacific Island countries (Federated States of Micronesia, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu) to produce, report and use data necessary to monitor national trends in agricultural production and the role played by the domestic agriculture sector (local food and labour markets) in mitigating external shocks and maintaining food security. The main section of the report comprises a synthesis of the study findings drawing on results from the surveys in the six countries visited, details of which are presented in Annex 1.

In all the countries surveyed, basic data on crop and livestock production, storage and sales and on the productivity of the main crops is generally very weak and often outdated or absent. None of the countries have any systematic approach to assessing trends in production and productivity (e.g. crop yields, area planted, input use and prices); despite the fact that decline in farm productivity and declining yields of staple crops are widely perceived as issues in regions of all the countries surveyed along with increasing concerns about food security. Good data on inputs, production and prices for the main farm products are also needed for indicators such as GDP growth from agriculture value added.

Whilst production statistics are very limited in all countries surveyed, commodity trade statistics are reported fairly regularly based on industry export reporting and customs data which is sometimes supplemented with information from quarantine inspection services. However, there remain problems related to consistent reporting (data gaps) and quality of data. All six countries surveyed collect and publish fairly regular retail price information to compile a Consumer Price Index (CPI), but only two countries (Tonga and Samoa) have established regular domestic market surveys.

Public access to general statistical information at national and regional level has improved markedly in recent years with the development of SPC/PRISM portal and supported national websites, but these sites currently have limited information on basic agriculture statistics. Agriculture data is still often located only in departmental/project reports and files which are not easily accessible.

The costs involved in collecting agricultural data are considerable, but the value of data can only be realized through its use to improve decision making. From the government perspective this implies value being realized through improved policy decisions, better monitoring of current policies and programmes, and improved investments (both public and private). But policy decisions are influenced not only by evidence, but also to a greater or lesser degree by other factors such as politics, culture

and religion; and interpretation of evidence when presented can be highly contestable when political, cultural or ethical issues are at stake. It is surmised, that that to date, science and evidence have probably played an insufficient role in policy making processes in the Pacific Island countries. Despite this, the focus of capacity building effort has generally been slanted more towards improved data capture and content rather than strengthening capacity to analyse data and use information (evidence) for improved decision making.

Only a few countries have dedicated policy/planning capacity in the Agriculture Ministry, but even in these countries there is limited activity in data analysis and dissemination of information useful for decision makers. Without appropriate analysis of agricultural statistics the value of them to the policy process is undermined. It is concluded that the lack of analysis and value adding of agriculture data represents a serious weakness if policy making is to improve, political demand for data is to increase, and nationally driven data collection and management is to improve in a sustainable way.

It is, therefore, crucial that the importance of good agricultural data for analysis to provide a better understanding of priority national issues such as food security, environmental degradation, and the impacts of global warming are clearly demonstrated to high-level decision makers.

This study is an input into a process initiated by FAO to enhance "evidence based decision making" in the Pacific region.

Introduction

Background

Agriculture is of importance in most Pacific Island Countries (PICs) for economic development (food and fuel production/domestic sales, exports and raw material for processing), for subsistence food production (home consumption and community obligations) and for social cohesion and resilience. The sector is thus fundamental for livelihoods and for ensuring food security in the face of economic and weather related shocks, globalised trade, high energy costs, labour migration and climate change. Being able to make informed decisions about how to facilitate sustainable sector development and how to monitor interventions would therefore seem to be a high priority. But despite the importance of the sector the general perception is that serious weaknesses in agricultural statistics persist in many countries in the region.

Data on food production, marketing and trade is either absent or very weak and frequently there are conflicting data sets recorded by different sources. A particularly chronic problem is the general unavailability of data on smallholder production for subsistence or for sale in local markets, which means that an important part of a country's food supply and of agriculture's contribution to rural activity is poorly accounted for.

A better understanding of the contribution of agriculture to the economy of Pacific island countries would not only assist in policy formulation and strengthen the basis for sound decision making, but would also create greater recognition of agriculture's crucial role in maintaining an economic base, social protection, food security and resilience in the face of economic and weather related shocks.

Study purpose, approach and structure of the report

The scoping study in six Pacific Island Countries[1] was carried out to assess the capacity to produce, report and use data necessary to monitor national trends in agricultural production and the role played by the domestic agriculture sector (local food and labour markets) in mitigating external shocks and maintaining food security.

To implement this study the consultant visited each of the six countries during May to November 2010 to meet with key informants in the institutions involved in agricultural data collection, management and use. This generally included staff in the National Statistics Office, the Ministries responsible for Agriculture, Finance, Planning and Health, Central Banks, Industry and Marketing Boards, and some other specific project staff (the list of persons met is provided at Annex 2). Additionally an extensive review was made of national, regional and international websites dealing with agriculture statistics together with a review of literature/reports and activities of organizations working in this area (references/reports consulted are included at Annex 3). The consultant also met with key informants from international and regional agencies and attended part of an FAO/SPC meeting on production and trade data[2]. Finally, a three-day regional expert consultation meeting[3]

[1] *Federated States of Micronesia (FSM), Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu*

[2] *FAO/SPC Regional Workshop on FAO data Collection, Processing and Dissemination Systems of Food and Agriculture Statistics, Nadi, Fiji, 24-28 May 2010*

was convened to review the provisional findings of the scoping study and discussions at this meeting have been used to inform this report.

The body of the report reviews current data sources and gaps and discusses ways to improve the capacity to produce and use critical data in the context of the small Pacific island nation's policy processes. In annex is a detailed account of the general status of systems of agriculture data production, analysis and reporting in the six countries surveyed.

This study is an input into a process initiated by FAO to enhance "evidence based decision making" in the Pacific region.

Synthesis of Study Findings

Data Sources and Gaps

A regional assessment of agriculture data systems in the Pacific was undertaken by Peter Walton back in 2001/02[4] and several other studies and reports have been published since regarding the status of statistics in the region, with the most recent being a benchmark (and way forward) study prepared in 2009 for the Pacific Island Forum Secretariat (PIFS) and the Secretariat of the Pacific Community (SPC)[5]. This latter study covered in great detail the institutional and capacity issues pertaining generally to statistics systems in the region with a focus on economic and social statistics, particularly those needed for monitoring national development agenda's and progress on MDGs, but did not look at statistics for specific sectors such as agriculture and tourism.

Overwhelmingly, these studies have concluded that statistical provision in the region is weak and needs improvement. Problems have been identified in all areas of the data management system; data collection, compilation and processing (range, coverage, quality, timeliness etc.) and also in analysis and policy value adding of data to better inform decision making. Furthermore, while such issues pertain to the supply of data, this area of weakness is matched by a lack of demand for, and use of scientific evidence (data) to inform decision making in many countries of the region. Walton's 2002 report identified some specific problems with access and use of agriculture statistics which included:

- Statistics are not current
- Data are inaccurate
- Informal activities (the subsistence and semi-subsistence sector) are underrepresented.
- There is little information on processing and manufacturing (value adding).
- There is lack of skills to use the available statistical information effectively.
- The importance of the role of agriculture statistics in effective decision-making is not reflected in the organization and management of agricultural statistics within institutions.

[3] *FAO Expert Consultation Workshop in Nadi ,Fiji, 20-22 October 2010*

[4] *Walton, P (2002) Collection, access and use of agricultural statistics in the Pacific Islands: Report of a study. ACIAR Impact Assessment Program; Working Papers Series No. 45.*

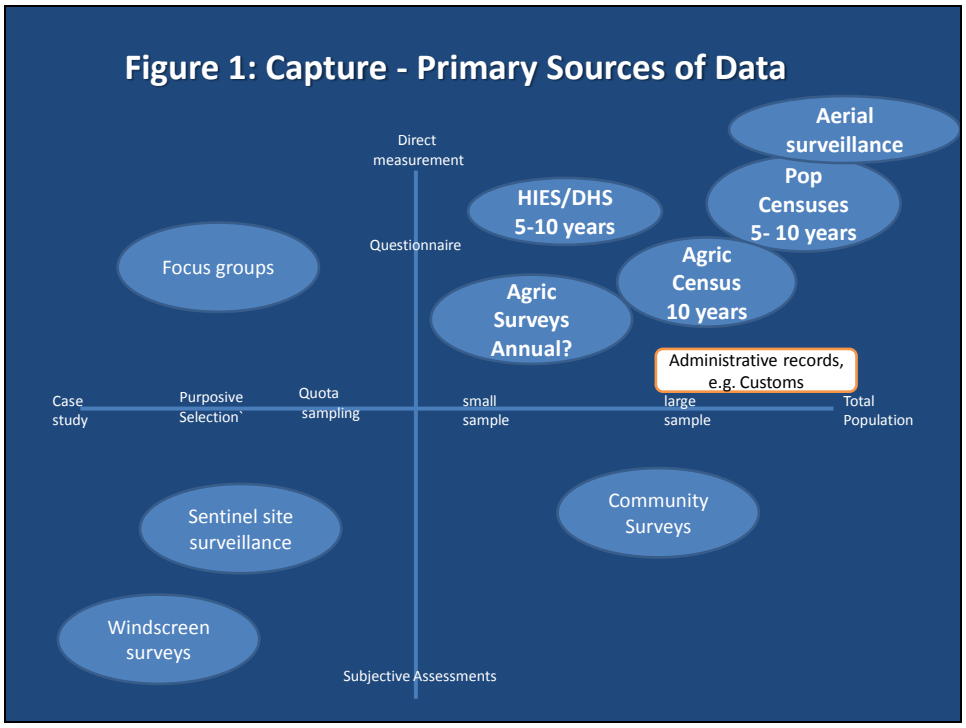
[5] *Philip Turnbull and Gosta Guteland of Sigmaplus Ltd and Iete Rouatu (2009) Strengthening Statistical Services through Regional Approaches: A Benchmark Study and Way Forward –Final Report Prepared for the Pacific Islands Forum Secretariat in association with the Secretariat of the Pacific Community.*

An underlying theme of the findings was that agricultural statistics and their management are not accorded the importance considered appropriate within the Pacific region. In most institutions, effective management of statistics is not a priority (as evidenced by resource allocations); for the most part Walton's findings still hold true some nine years later!

What agriculture data do countries have?

The above question might more appropriately have been phrased as "*What agriculture data don't countries have*"! In all the countries surveyed, basic data on crop and livestock production, storage and sales and on the productivity of the main crops is generally very weak and often outdated or absent.

The main primary sources of agriculture data can be depicted as in Figure 1 (adapted from Tracking results in agriculture and rural development in less-than-ideal condition: a sourcebook of indicators for monitoring and evaluation published by the Global Donor Platform for Rural Development, FAO and the World Bank in 2008).



A review of the recent and planned surveys and census relevant to the agriculture sector in the six countries of this study are shown in Table 1.

Table 1: Recent and planned census and surveys

Country	Ag. Census	Ag. Survey	Population Census	HIES	DHS	Domestic market Survey
Kiribati	None	Baseline survey 2010	2005;2010	1996; 2006; 2011	2010	none
FSM	None	Ad hoc surveys and studies	1994;2000; 2010	1998; 2005[2]; 2011	?	none
Samoa	1999; 2009[1]	surveys 2000;2002; 2004;2005	2001;2006; 2011	1997;2002; 2008[3]	2000; 2009[1]	Weekly central market
Solomon I.	1986?	Ad hoc surveys and studies	1999; 2009/10	2005/6; 2011	2006/7	Ad hoc (project)
Tonga	2001	Annual extension staff surveys	1996;2006; 2011	2000/01; 2009/10	2011	Weekly central, roadside, & Vavau
Vanuatu	1993; 2007	1990;1991; 1992	1999;2009	2006; 2010[4]	?	none

[1]Report anticipated in 2010; [2]Report published 2007; [3]Report published 2010; [4]Suvey underway

Only Samoa and Vanuatu have recently implemented agriculture census and the gap between the censuses was 14 years in the case of Vanuatu. Whilst the gap between censuses in Samoa has been the recommended 10 years, delays expected in publication of the 2009 census report are likely to extend this by another one-to- two years. Tonga's last agriculture census was undertaken in 2001 and although there is some discussion of one being implemented in 2011 there are no firm plans for this. The other three countries in the survey (Kiribati, FSM and Solomon Islands) have either never conducted an agriculture census or have no available records of one. Annual agriculture surveys, linked to the census sampling frame, are also generally lacking. Some countries do occasionally commission *ad hoc* surveys for specific purposes such as two surveys implemented in Vanuatu (2008 & 2009) to gain information on the coconut sector in relation to capacity to produce biofuel for electric power generation, and a baseline *Food Security and Vulnerability Survey* in relation to monitoring impact and adaptation to climate change conducted in FSM in 2010. Whilst in Tonga extension officers conduct an annual visual estimation of crop planting areas. However, none of the countries have any systematic approach to assessing trends in production and productivity (e.g. crop yields, area planted, input use and prices); despite the fact that decline in farm productivity and declining yields of staple crops are widely perceived as issues in regions of all the countries surveyed along with increasing concerns about food security. Good data on inputs, production and prices for the main farm products are also needed for indicators such as GDP growth from agriculture value added.

Other sources where data relevant to the agriculture sector may be collected are Population Census, the Household Income and Expenditure Surveys (HEIS) and Demographic Health Surveys (DHS). With strong support from development partners and regional technical agencies (particularly SPC), Population Census and HIES are now being conducted more widely and frequently (all six countries have implemented a HIES within the last five years, and in some countries at 5 year intervals).
The HIES is a particularly useful source of agricultural information on household production for home consumption and for sale, and allows for cross tabulation with other social and demographic

statistics thus enhancing the policy value of the data collected. With the assistance of the UNDP Pacific Centre the HIES have been the basis for preparation of reports on basic needs poverty lines and the incidence and characteristics of hardship and poverty in several countries[6]. There is now a growing recognition of the importance of the data generated by HIES, both in terms of the information it can provide on poverty, and also the importance of accurately capturing subsistence production and consumption for national accounts purposes. As a consequence, some countries are committing an increased proportion of national budget funds (as opposed to donor funds) for implementing these surveys[7]

Whilst production statistics are very limited in all countries surveyed, commodity trade statistics are generally reported fairly regularly based on industry export reporting and customs data which is sometimes supplemented with information from quarantine inspection services. However, there remain problems related to consistent reporting (data gaps) and quality of data. Customs data on import values is more likely to be available because of its link to revenue collection. Whereas quarantine data on fresh produce imports (and exports) tends to record volumes, but not values. Most customs data is imputed electronically and is thus more easily shared with the NSO than quarantine data which in many cases remains in paper copy only. Since 2007 the SPC (with initial funding and technical support from FAO) have been assisting thirteen countries[8] in the region to improve the collection, processing, reporting and quality of trade data and have launched the freely accessible and searchable web-based Pacific Trade Statistics Database[9] . The database now enables interested parties to access and analyse import and export data (for years from 2000 to 2009) at a Harmonized System (HS -2002) code six-digit level. However, gaps in the Harmonized System for product classification in international trade mean that several Pacific agricultural products of importance are not differentiated under the 2002 classification and are thus not recognized as individual trade items, but rather are lumped together thus obscuring the specific value of trade[10]. Other problems relate to capturing data on informal trade particularly in processed (including cooked) food products which can be quite significant in some countries. Indeed, analysis conducted by SPC on Samoan Quarantine statistics for 2007/08 identified that in that country, the value of 'informal' exports exceeded the value of formal exports for many products (Tim Martyn, personal communication).

Whilst all six countries surveyed collect (but still usually only in the main urban centre) and publish fairly regular retail price information to compile a Consumer Price Index (CPI), only two countries (Tonga and Samoa) have established regular domestic market surveys. Tonga currently produces a quarterly market survey report which includes average prices, weights and total supply of the principal traded products based on weekly surveys from the central municipal market in Nukualofa and roadside market stalls on Tongatapu Island, as well as from the municipal market in Vava'u Island. Unfortunately the quarterly 'Domestic Market Survey Report' for Tonga is currently only

[6] Kiribati 2010 based on the analysis of the 2006 HIES; FSM 2009 based on analysis of 2005 HIES; Samoa 2010 based on the analysis of the 2008 HIES; Solomon Islands 2008 based on the analysis of 2005/6 HIES available on the UNDP Pacific Centre website

[7] E.g. Samoa national budget fully funded the 2008 HIES

[8] Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Samoa, the Solomon Islands, Tonga, Tuvalu and Vanuatu

[9] The Pacific Trade Database is receiving continuing funding from the EU Facilitating Agriculture Commodity Trade (FACT)project

[10] An example of products lumped together as other 'miscellaneous' products under the current HS are noni and breadfruit; both items being of considerable importance to several countries in the region (pers. comm. Tim Martyn, SPC Economist).

available in hard copy (from MAFFF) and is not readily accessible to the public through a government website.

In Samoa a regular weekly survey (on Fridays) is carried out at the central municipal market in Apia to collect price and volume data on a range of local agriculture produce (e.g. Colocasia taro, Xanthosoma taro, Alocasia [Ta'amu], coconut, breadfruit, yam, head cabbage, Chinese cabbage, cucumber, tomato, pumpkin and taro leaf). The data is compiled and analysed and published in a monthly review report (Fugalei Market Survey Report). Since 2008 the Samoa Bureau of Statistics (the NSO) has been responsible for collecting and publishing this report and copies can be downloaded from their website. Prior to 2008 the survey was the responsibility of the Central Bank of Samoa (CBS) and historical data is kept by them.

Extending the survey to satellite roadside markets and the Savaii market is being considered, but this will depend on resources and an assessment of the volume of produce traded on these markets. The CBS assessed the volume of trade on these markets back in 2007 and found it to be very small in proportion to the central Fugalei market and thus did not consider it worthwhile to extend the survey. However, things may have changed as more trading now appears to be occurring at the satellite markets.

Public access to general statistical information at national and regional level has improved markedly in recent years with the development of SPC/PRISM[11] portal and supported national websites, but these sites currently have limited information on basic agriculture statistics. Agriculture data is still often located only in departmental/project reports and files which are not easily accessible. Unfortunately, Agriculture Ministry Annual Reports which in the past were often a good source of sector data generally no longer maintain this tradition. Whilst the very low response rates to FAO data-collection questionnaires[12] from Pacific countries limit the availability and quality of data on FAOSTAT. With no 'official' data for several countries in the region FAOSTAT statistics are based largely on estimated or FAO calculated figures.

What data do countries need?

Whilst the costs involved in collecting agricultural data are considerable, the value of data can only be realized through its use to improve decision making. From the government perspective this implies value being realized through improved policy decisions, better monitoring of current policies and programmes, and improved investments (both public and private). Thus the kinds of data and the approach to collecting it must always consider country-level priority issues and the various uses to which the resulting information will be put; weighing the costs against the potential benefits. It is important, therefore, that national data users (agencies involved in agricultural policy formulation implementation and monitoring) coordinate closely on their information needs with data producers. However, currently much of the drive to improve data collection and to define core data sets in

[11] *PRISM is the central information portal for the Pacific islands region, collating publications, reports and statistics from 22 countries and territories, and presenting a comprehensive range of indicators through regional data tables (source: PRISM website)*

[12] *The FAO sends annual questionnaires to countries requesting data on production, trade, land use, agricultural machinery and equipment, fertilizer, and pesticides. Producer price data are also requested. In 2010 only 4 Pacific Island Countries returned FAO Questionnaires on Agriculture Production.*

Pacific countries is coming from the international and regional levels rather than from national governments.

At the international level a "Global Strategy to Improve Agricultural and Rural Statistics" has been prepared by the World Bank in collaboration with FAO, 'Friends of the Chair' working groups[13], and through extensive consultations with stakeholders. The purpose of the Global Strategy is to provide a vision for national and international statistical systems to support decision-making in the twenty-first century. The Global Strategy is based on three pillars: agreement on a minimum set of core data that each country will provide, the integration of agriculture into the national statistical system, and the establishment of a sustainable statistical system through governance and statistical capacity-building.

The first pillar is the identification of a minimum set of core data (and identifying national priorities) that will provide national and international policymakers with the necessary information about issues of interest to countries and also issues that go beyond national boundaries. The minimum set of core data includes statistics on production for major items, trade, land cover and water use, the effect of agriculture on the environment and climate change, and the monitoring of efforts to reduce poverty. The Global Strategy provides a framework for countries to add items of national interest to the set of core data and to determine the frequency with which they will be provided. A core item is one whose data enter into a multitude of indicators needed to monitor and evaluate development policies, food security, and progress toward meeting the MDG goals. Core data should provide inputs to the national accounts and global balances of supply and demand for food and other agricultural products. Core data items which are crops should account for a major proportion of land use, contribute significantly to farm and rural household well-being, and have an effect on the environment and climate. The set of core data is considered to be the starting point for the improvement of agricultural statistics and are seen as the building block to establish methodology and to integrate agriculture and rural statistics into the national system. The minimum set of core data proposed in the Global Strategy is shown in Table 1.[14]

Table 1 Minimum Core Data

Key: ***Red*** *implies data generally not available in the Pacific countries surveyed;* ***White*** *implies some data should be available, but not complete or easily accessible;* ***Green*** *implies data generally collected and available, but still sometimes issues of quality and timelines.*

Group of Variables	*Key Variables*	*Core data items*	*Frequency*
Economic			
- Output	*Production*	*Core crops (e.g wheat, rice, etc.)* *Core livestock (e.g. cattle, sheep, pigs, etc.)* *Core forestry products* *Core fishery and aquaculture products*	*Annual*

[13] *The Friends of Chair Working Group was formed by the UN Statistical Commission to help develop the global strategy for review and approval at the 41st Meeting of the Commission in 2010. The Working Group is led by Brazil and includes Australia, Brazil, China, Cuba, Ethiopia, Italy, Morocco, the Philippines, the Russian Federation, Trinidad and Tobago, Uganda, the United States, the FAO and the UN Statistics Division, both serving as observer and secretariat, and Eurostat and the World Bank (observers).*

[14] *Report of the Friends of the Chair on Agricultural Statistics to the United Nations Statistical Commission Forty-first Session, 23-26 February 2010, New York. United Nations Economic and Social Council.*

Group of Variables	Key Variables	Core data items	Frequency
	Area harvested and planted	*Core crops (e.g wheat, rice, etc.)*	*Annual*
	Yield / Productivity	*Core crops, core livestock, core forestry, core fishery*	*Annual*
- Trade	*Exports in quantity and value*	*Core crops, core livestock, core forestry, core fishery*	*Annual*
	imports in quantity and value	*Core crops, core livestock, core forestry, core fishery*	*Annual*
Stocks	*Quantities in storage at beginning of harvest*	*Core crops*	*Annual*
- Stock of Resources	*Land cover and use*	*Land area*	[15]
	Economically active population	*Number of people in working age by sex*	
	Livestock		
	Machinery	*e.g. Number of Tractors, harvesters, seeders etc.*	
- Inputs	*Water*	*Quantity of water withdrawn for agricultural irrigation*	
	Fertilizers in quantity and value	*Core Fertilizers by core crops*	
	Pesticides in quantity and value	*Core Pesticides (e.g. fungicides herbicides, insecticides, disinfectants) by core crops*	
	Seeds in quantity and value	*by core crops*	
	Feed in quantity and value	*by core crops*	
Agro processing	*Volume of core crops/livestock/fishery used in processing food*	*By industry*	
	Value of output of processed food	*By industry*	
	Other uses (e.g. biofuels)		
Prices	*Producer prices*	*Core crops, core livestock, core forestry, core fishery*	
	Consumer prices	*Core crops, core livestock, core forestry, core fishery*	
Final expenditure	*Government expenditure on agriculture and rural development*	*Public investments, Subsidies, etc.*	
	Private Investments	*Investment in machinery, in research and development, in infrastructure*	
	Household consumption	*Consumption of core crops/livestock/etc. in quantity and value*	
Rural Infrastructure (Capital stock)	*Irrigation/roads/railways/ communications*	*Area equipped for Irrigation / Roads in Km / Railways in Km / communications*	
International transfer	*ODA[16] for agriculture and rural development*		
Social			
Demographics of urban and rural population	*Sex*		
	Age in completed years	*By sex*	

[15] *The frequency for the following items will be established by the framework provided in the Global Strategy to determine the national priorities for content, scope, and frequency. The frequency requirement will also be considered in the establishment of the integrated survey framework where the data sources will be defined.*

[16] *Official Development Assistance*

Group of Variables	Key Variables	Core data items	Frequency
	Country of birth	By sex	
	Highest level of education completed	1 digit ISCED by sex	
	Labor status	Employed, unemployed, inactive by sex	
	Status in employment	Self Employment and employee by sex	
	Economic sector in employment	International Standard Industrial Classification by sex	
	Occupation in employment	International Standard Classification of Occupations by sex	
	Total income of the household		
	Household composition	By sex	
	Number of family/ hired workers on the holding	By sex	
	Housing conditions	Type of building, building character, main material, etc.	
Environmental			
Land	Soil degradation	Variables will be based on above core items on land cover and use, water use, and other inputs to production.	
Water	Pollution due to agriculture		
Air	Emissions due to agriculture		
Geographic location			
GIS coordinates	location of the statistical unit	Parcel, Province, Region, Country	
Degree of urbanization	Urban/Rural area		

This data would be used to compile a set of indicators to monitor agriculture and rural development. A proposed menu of indicators provided in the Global Strategy is included at Annex 3.

At the regional level as early as 2002 Walton's report recommended that a preliminary list of core basic agricultural statistical data be considered at national and regional fora leading to a 'regional standard' for core basic agricultural data. More recently, SPC has initiated a process to develop a *National Minimum Development Indicator* framework which aims to assist harmonization of indicators and to provide unambiguous development benchmarks for all Pacific island countries and territories that would enable regular monitoring of development progress. The SPC preliminary list of minimum indicators recommended for agriculture and forestry is included at Annex 4. The indicators which are deemed to be in common in both the global strategy and the SPC list have been highlighted (see Appendices 3 & 4). Out of the 14 recommended by SPC ten have been identified to be in common with ones listed in the Global Strategy. Of the remaining four, two cover diversity of diets and diet related diseases (issues which have significance in many Pacific countries), one relates to level of remittances and the other to the rate of biodiversity loss.

It is not the intended purpose of this study to prescribe a list of core data and indicators for the Pacific Island countries, however, it is recommended that processes to develop them should have a strong country-level input (so that chosen indicators have a strong link to the national policy framework), but also be cognizant of the international-level efforts such as the "Global Strategy to Improve Agricultural and Rural Statistics" and thus aim to be compatible with international formats and standards.

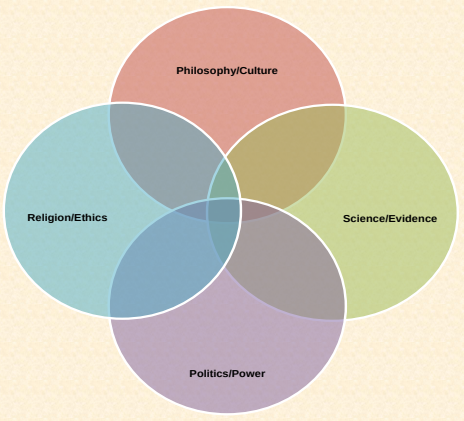
What are data used for and who are the users?

The impression gained in this study from consultation with country stakeholders was that much of the demand for data comes from international and regional agencies (including technical assistance and donor agencies) along with consultants who are often working on behalf of these agencies. In contrast, the demand for data at the national political level was not considered to be very high. However, this impression must be put into the context that most of the small island countries in this survey are heavily dependent on development partner funding. In general, national budgets for agriculture are relatively small and the bulk of allocations are used for staff salaries and other recurrent costs whilst development spending is predominately resourced by donor funds. It is therefore understandable that development partners are particularly concerned that investments are effectively targeted and impact is monitored. These agencies are therefore keen advocates of evidence-based decision making and results-based monitoring which is reliant on a timely supply of quality data.

But policy decisions are influenced not only by evidence, but also to a greater or lesser degree by other factors such as politics, culture and religion (Box 1); and interpretation of evidence when presented can be highly contestable when political, cultural or ethical issues are at stake. Data, which at first appear objective and value-free, are of course constructed within a particular socio-political context and the context effects outcomes, but this is usually ignored when assuming that data can be objective and 'true'. Moreover, there may be political risks from increased transparency in information driven approaches to policy; therefore the greater transparency that improved data could provide is not always universally welcomed in political circles! It is this observers view, based on 20 years experience living and working in the region, that to date, science and evidence have probably played an insufficient role in policy making processes in the Pacific Island countries.

This said, some areas for evidence have gained greater political interest in recent years, these include: food security - particularly following recent global price hikes (and rising health concerns) for imported foods such as rice; trade – particularly in relation to negotiation of trade agreements such as PACER plus; and Climate Change – particularly in relation to impact, adaptation and the potential value of carbon offsets.

Box 1: Dimensions of policy decision making



Evidence is neither gathered nor interpreted in a vacuum.

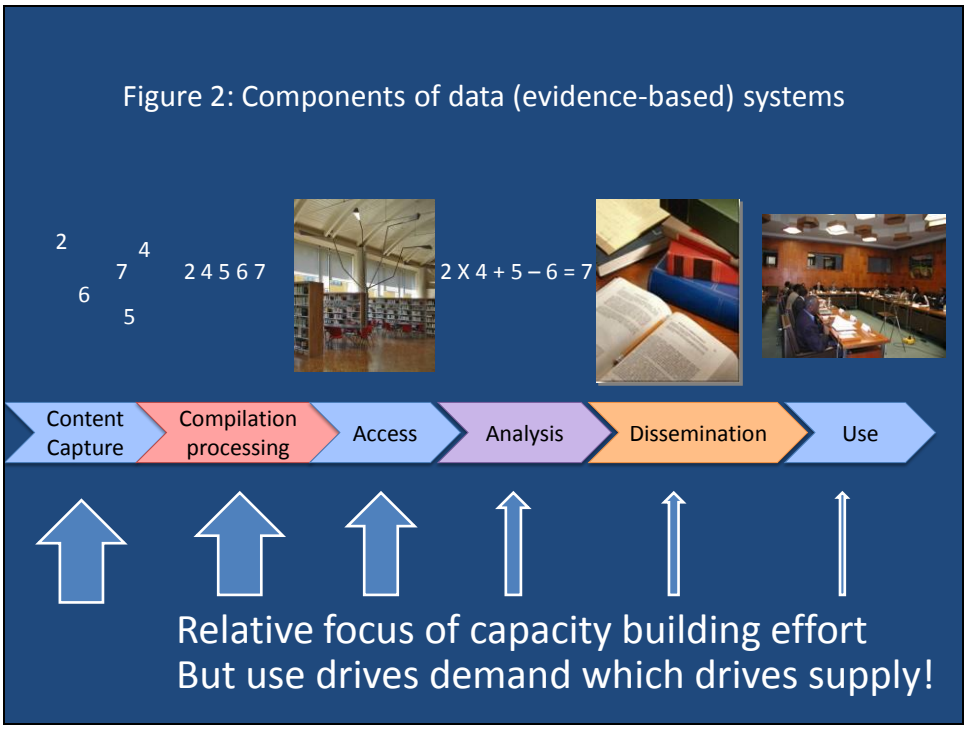
Interpretation of evidence is often highly contestable when political, ethical or philosophical issues are at stake

To date, science and evidence have probably played an insufficient role in policy making processes in the Pacific region.

What approach might be adopted to strengthen data production, analysis and use?

A notable finding of the of the PIFS/SPC 2009 Benchmark Study was that NSO's in the region now generally have ample hardware such as computers and printers implying that the constraint in producing statistical outputs is not to do with lack of equipment. However human resource capacity constraints and budget constraints for implementation of data collection activities, both in NSOs and in Agriculture Departments, would still be considered prevalent in the countries included in this survey. Furthermore, capacity to compile and analyse data to provide policy relevant information to guide decision making is often lacking in the relevant national institutions. Despite this, to date the focus of capacity building effort has generally been slanted more towards improved capture and content rather than strengthening capacity to analyse data and use information (evidence) for improved decision making (Figure 2).

Only a few countries have dedicated policy/planning capacity in the Agriculture Ministry (e.g. Samoa, Tonga), but even in these countries there is limited activity in data analysis and dissemination of information useful for decision makers. Without appropriate analysis of agricultural statistics the value of them to the policy process is undermined. It is considered that the lack of analysis and value adding of agriculture data represents a serious weakness if policy making is to improve, political demand for data is to increase, and nationally driven data collection and management is to improve in a sustainable way.

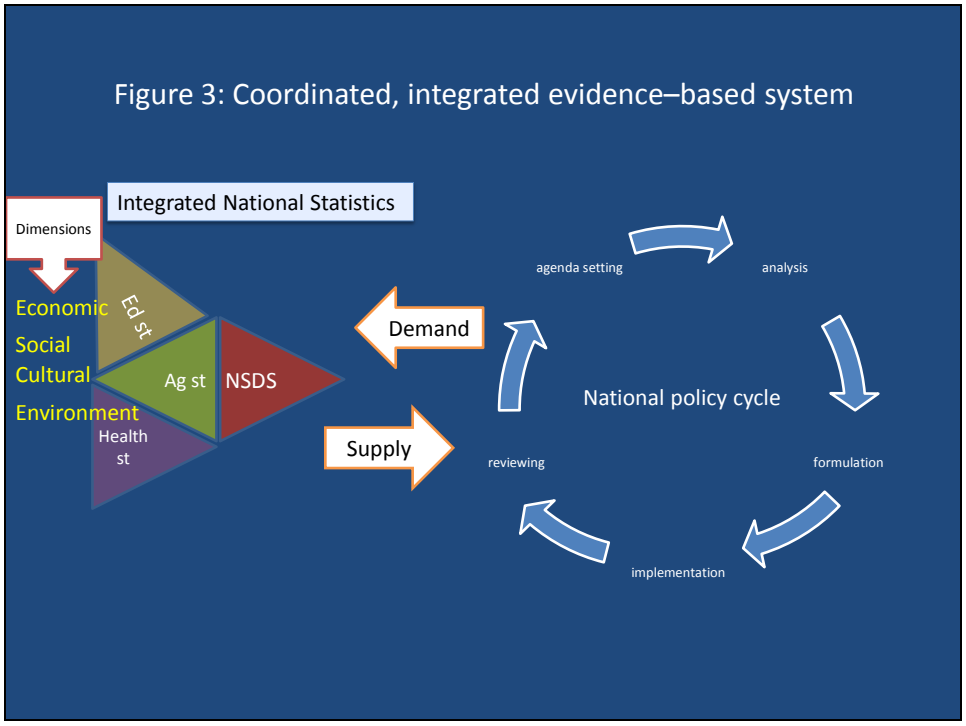


Furthermore, whilst some of the countries in the study do have more of a tradition of collecting agricultural statistics, none could be described as having developed structured national agricultural statistics systems with well defined objectives and strategic direction.

In order to move things forward, a higher priority needs to be given to demonstrating the value ($) of agriculture data for decision makers. This would imply more attention on analysis and dissemination of policy relevant information which would require an increased focus on capacity

building in this area. Additionally, considering the high costs involved in collecting agricultural data, finding ways to enhance the policy value through integration with other economic and social data to provide more policy guidance without escalating costs will also be important. Here multi-topic surveys (such as the HIES) offer considerable opportunities to be exploited. It is far more useful to know at the household level whether improved nutritional health can be attributed to an increase in home food production, or increased cash sales of farm produce, and how the level of educational attainment of household members might impact on these issues; rather than simply knowing the quantity of agricultural production from a farm holding. Policy areas overlap and therefore data sources must be adapted to satisfy multiple needs.

Another area that requires attention is strengthening of the in-country policy process, here we have been talking about evidence-based policy, whilst the majority of countries in the study don't have an agriculture sector policy or an established process which both directs the supply and creates a demand for high quality data (Figure 3). A coordinated and integrated evidence-based system is required to ensure that data is not produced in a relative vacuum and thus lies unused in databanks and office files. Currently the lack of capacity to analyse data in a policy perspective, results in lost opportunities and a significant waste of resources if large amounts of raw data are not properly used.



Alick Nyasulu (SPC Economic Statistician) at the recent FAO Expert Consultation Workshop on enhancing evidence-based decision making for sustainable agriculture sector development in Pacific Island countries stated that:

> *"Amongst the challenges faced by PICTs in tracking development progress is the need to increase political commitment backed by tangible improvements in the implementation of support mechanisms to enable regular monitoring of progress. The importance of this challenge is illustrated in a widespread lack of domestic demand for (regular) development statistics, absence of regular policy and development progress monitoring at national level (including requirements*

to do so) and lack of interaction between producers and users of statistics (to ensure match between what's available and what is needed)."

It is clear that a countries willingness to provide sustained investment in the collection and maintenance of good agricultural statistics for use in support of improved policy making would require decision makers being convinced of the value of this data. The recently launched SPC Trade Statistics Database provides an increased number of potential users in the region access to trade data at a level of accuracy and detail hitherto unavailable thus providing national governments a stronger information base for trade negotiations and to develop improved trade policy and private sector marketing decisions. The feedback from stakeholders (particularly Ministries of Trade) during the consultations in this study indicated very strong interest in and appreciation for the policy value of this data resource. This web-based data source is therefore a good example of a way to enhance use and demand for quality data and all those involved (FAO for initiating the project, SPC for implementing it and the EU FACT project for continuing support) should be commended. A challenge will be to ensure that funding is sustainable to maintain this valuable regional resource.

There is now a need for concrete examples of 'policy' successes based on evidence that demonstrate the value of data to politicians. Recognizing that many aspects of agriculture are inherently difficult and expensive to measure, including valuation of smallholder agricultural output and field measurements of crop yields and production (which is further exacerbated by seasonality of farming), regular monitoring of domestic market activity might provide a useful proxy to assess impact of external factors (such as food price hikes) or national policy actions (e.g. freight subsidies, improved national shipping or transport infrastructure) on the performance of the domestic agriculture sector (volume of produce and prices).

The use of domestic market data to measure the 'pulse' of food production and commercialization and the impact of both domestic and external factors on this could possibly provide some useful examples to demonstrate the value of data to decision makers. To this end, FAO (with funding support by the EU AAACP[17]) are commissioning a series of case studies in which domestic market data will be collected and used to analyse contemporary policy issues. The objectives will be both to demonstrate the importance of developing and maintaining systems of domestic market data collection and use, and the value of good data for improved decision making.

Conclusions

None of the countries in the study have demonstrated capacity to generate (timely and accurate) data for consistent annual reporting on agricultural production – crop yields and area (or for livestock production). Several of the countries have never conducted an agriculture census or an annual survey. This means for international agencies such as FAO attempting to source such information through circulation of an annual questionnaire is likely to continue to provide unsatisfactory results.

Indeed, the generally small size and consequent limited financial and human resources of Pacific island countries led the authors of the recent PIFS/SPC Benchmark Study to conclude that annual

[17] *Launched in 2007 the EU-funded All ACP Agriculture Commodities Programme seeks to address commodity issues through innovative approaches.*

data is not realistic in the Pacific context. But they did consider that relevant data gathering surveys need to be more frequent than in the past.

Countries currently implement a number of surveys including HIES, DHS and Population census which collect some information relevant to the agriculture sector and these multi-topic surveys offer the opportunity to add policy value through cross tabulation and analysis. Integrating collection of core data in a strategic way through a modular approach or by use of a purposely designed multi-sectoral survey implemented every two-to-three years would seem to be an appropriate approach to aspire to in the resource constrained small Pacific Island countries.

But whilst it remains important to increase the availability of quality data it is equally important to improve the ability of government officials to analyse and use the resulting information to strengthen policy processes and inform decision making, which also includes disseminating relevant information for private sector marketing and investment decisions. Emphasis now needs to be shifted to put users more firmly in the centre of the picture and to demonstrate the value of good data to both government and private sector decision makers.

The Pacific 2020 Agriculture Background Paper[18] concluded that there are many examples of the enduring benefits to the sector from implementing soundly formulated policy and conversely the implementation of poorly formulated policy can have prolonged negative impact. Therefore there is urgent need to improve the quality of policy advice provided to governments and the ability of decision-makers to interpret this advice through building policy analysis capacity in departments of agriculture in the region and making the provision of sound policy analysis and advice their core function.

However, this study also recognized that it is unrealistic to expect that even the largest island countries will have sufficient capacity to deal in a timely fashion with all the policy issues impinging on the agriculture and natural resources sector and that there would be scope for regional support in this area from an independent body which could also provide training of national staff in policy analysis. A first step would be the need to look closer at national intuitional set-ups – who is responsible for collection & management and who is responsible for analysis and delivery of policy relevant information.

Poor supply of agricultural data coupled with weak capacity for analysis and limited demand for use in political decision making combine to undermine sustainable improvements in agriculture data systems in the region. Recognizing data quality and the system as a whole is driven by demand and demand will be driven by the awareness of the value by decision makers, it is vitally important to demonstrate the value of data to the political level.

Currently there may be too much emphasis being placed on international comparisons (MDGs etc) driven by international agencies and not enough on national uses of data and its value for policy reforms and its role in improving national development and peoples welfare. The priority issues now therefore are not only what data (statistics) to collect or how to collect them, but also what use to make of them that returns the cost of collection!

[18] *McGregor, A (2006) Pacific 2020 Background Paper: Agriculture, Australian Agency for International Development, Canberra, Australia.*

Annexes

ANNEX 1
General status of system of agriculture data production, analysis and reporting in the six Pacific island countries surveyed.

Solomon Islands

The country was visited by the consultant during 17 -21 May, 2010.

CONTEXT

Solomon Islands is the third largest archipelago in the South Pacific consisting of six large and 986 small islands with a total land area of 28,370 km². The islands, mostly rugged mountains with some low coral atolls, are scattered leading to major challenges in the development of infrastructure, transportation, communications networks and rural development in general. The 2005/6 Household Income and Expenditure Survey (HIES) estimated the population at 533,672 with 84% of the population living in rural areas. Livelihoods are based mostly on a mixture of subsistence and cash crop farming, gathering of forest products, and fishing. The Agriculture Sector (crops, livestock, forestry and fishing) contributes around 50% of GDP, but the formal sector for crops is very small at present, accounting for only 1.4% of agriculture value added in 2004. The bulk of production is by the informal sector, either for market or own consumption within the producing household. The only major urban centre is the capital Honiara, located on the island of Guadalcanal, with an estimated population of about 69,189 (HIES 2005/6).

Between 1998 and 2002 civil unrest and ethnic tension prevailed and resulted in social upheaval and violence. During that period GDP fell by an estimated 24 percent and businesses and government services were severely disrupted with many of the key functions of government not being carried out due to the lack of capacity, motivation or skill within the civil service. Public finance data suggest that many Solomon Island Government-funded agriculture, fisheries and forestry activities had reached the point of breakdown, or were close to breakdown, in the aftermath of the tensions[19]. In July 2003, at the request of the Solomon Island's Government, a Regional Assistance Mission (RAMSI) was called in to assist the country. RAMSI has helped to restore law and order, but the domestic political situation remains fragile. Since the end of the civil conflict real GDP growth has averaged over 7 percent, but this has largely been based on unsustainable logging and increased aid flows. Whilst there has been improved economic performance in recent years this has been offset by high population growth (2.8 % annually). With an estimated GDP per capita of around US$ 750, the Solomon Islands still ranks among the poorest countries in the Pacific.

Currently, the capacity of national and provincial government and civil society still remains weak[20]. Whilst the share of general government expenditure (internally and donor funded) allocated to agriculture and rural development is estimated to have ranged from 15% to 20% in the early 1990s and 13% over the entire 1990s, the share is now below 10%, with the specific share of expenditure allocated to agriculture and fisheries having declined somewhat since the early 1990s to the current level of approximately 3% [1]. Such a large reduction in

[19] *Solomon Islands. Managing Public Finances for Agriculture and Rural Development, Draft Report, August 2006, prepared for the Agriculture and Rural Development Strategy by Craig Sugden (World Bank).*
[20] *While the 1998 cutbacks to the total number of civil servants have now almost been reversed, the approved number of positions in the agriculture department has declined even further since 1998. In total, the current number of approved positions is less than half the 1998 level.*

funding must inevitably undermine the quality and coverage of government services including the capacity to collect and report critical data. The Solomon Islands/FAO National Medium Term priority Framework (NMTPF) identifies lack of agriculture statistics and baseline data for the sector as a key development issue[21].

ORGANISATIONS CONCERNED WITH AGRICULTURAL DATA AND KEY ACTIVITIES

The national statistical system in Solomon Islands is centralised, but poorly coordinated and lacks an appropriate structure with well defined objectives and strategic direction. The Solomon Islands National Statistics Office (SINSO) in the Ministry of Finance and Treasury is the official statistical agency for the Government of Solomon Islands and has the legal mandate to collect and publish national statistics. They publish statistical bulletins (Trade, GDP, and CPI etc.) and census and survey reports and SPC Prism maintain a website (http://www.spc.int/prism/country/sb/stats/) where data can be accessed and a selection of reports downloaded. However, when the website was accessed in June 2010 its recorded last update was 14 October 2009. SINSO is also responsible for census and surveys. Recent surveys include the 2005/06 Household Income and Expenditure Survey (HIES), the 2007 Demographic Health Survey (DHS) and the 2009 Population Census (publication of report anticipated later in 2010). They also maintain some population GIS (PopGIS) Maps based on the 1999 Population Census. They have not undertaken an agriculture census or survey for over 20 years. The Central Bank of Solomon Islands (CBSI) has an Economic Research and Statistics Department which compiles, analyses and publishes economic statistics including agriculture merchandised trade statistics in their Quarterly Reviews which are available on the Bank's website www.cbsi.com.sb . Commentary in the report on the domestic economy also includes a production index of major commodities (logs, cocoa, fish, palm oil and copra) and statistical tables record monthly production by major commodity and quarterly period average international commodity prices. Statistical tables also include up to date sectoral distribution of commercial credit outstanding which records credit to agriculture, forestry and fisheries separately. Tables also record quarterly exchange rates (Nominal Effective, Real Effective 1 based on relative retail prices and Real Effective 2 based on domestic retail prices and foreign export prices and Terms of Trade – export unit values relative to foreign export prices). The value of exports by commodity and the value of imports by commodity group are classified based on the Standard International Trade Classification (SITC) system.

The Ministry of Agriculture and Livestock (MAL) have very limited capacity to collect and manage data. The Minister recognizes data needs as a priority area and that they have no base line data for planning and monitoring purposes. But currently no budget is allocated to agriculture data/statistics collection and management and there is no dedicated staff member in this area. The Ministry have shown interest in implementation of an agriculture census as the last census was conducted sometime in the 1980's. The Quarantine Division records volumes of imports and exports which are kept at respective points of entry. These are paper copies that need to be entered into a computer data base. They currently have 44 staff, but find it difficult to cover effectively all the border entry points. The MAL Information Section is maintaining an information system SoNAIS (Solomon Islands National Agricultural Information System) using a shell similar to one used by the National Agriculture Research Institute (NARI) in Papua New Guinea. SoNAIS comprises a library catalogue of books, journal articles, conference papers, trial reports and other information resources held by the CEMA, Community Sector Program, Development Services Exchange, Kastom Garden Association, MAL, Oxfam, Vos Blong Mere, World Vision and others in their libraries and information centres throughout the SI. With support from a FAO Technical Cooperation Project (TCP/SOI/3001) in 2005 work on establishment of crop budgets and farm profitability was undertaken. This project produced a report which reported Gross Margin Budgets for selected cropping enterprises (Lafaele Enoka, 2005), but there is no comprehensive up-to-date Farm Management Manual available.

The Health Ministry, Department of Policy and Planning staff recognized the importance of data for monitoring food security and the significance of the agriculture sector in livelihoods, but the only multi-topic survey available which contains useful information on child nutrition and child stunting and wasting is the DHS 2006/2007 which was supported by SPC/ADB. The DHS also collected information on household characteristics

[21] *Pacific Multi-Country NMTPF Document 2009-2013, For Cooperation and Partnership between FAO and 13 Pacific Island Countries, page 93.*

similar to the HIES – including employment in agriculture. No other specific food consumption/nutrition surveys are available. The Ministry maintain a health information system which captures information from provinces, mostly on medical health related data, but this has no website to access information. Information is available only through department reports which have limited circulation.

The Commodity Export Market Authority (CEMA) prescribed products are copra, cocoa, coffee, vanilla, cardamom, chillies and palm oil. However CEMA currently only collect data on copra and cocoa. During the time CEMA was trading in commodities they had a strong network of buying agents who collected and reported data on volumes, prices and quality at very detailed level – area of province and even sometimes down to individual farm. However, following liberalization in 2002 CEMA became only responsible for regulating the industry (for licensing exporters, quality control and producer training). Now they rely on data from exporters for cocoa and copra – these are the only commodities for which they keep records. The data is much less detailed than previously recorded because exporters do not see collecting and providing data as a priority and consider it an extra expense. However they are still obliged to provide data to CEMA, but relevant regulations on this are outdated. Nevertheless, CEMA still publish data on volumes and prices from different provinces relying on exporters reporting and provide the data to CBSI. Currently CEMA finances are very critically low and they are having difficulty in meeting their responsibilities in training and in data management. CEMA used to keep market volumes and prices for local market produce, and also broadcast on radio on weekly basis, including cocoa prices, but no longer have capacity and budget to do this. The oil palm industry is responsible for providing data on these sector commodities.

The Community Sector Program (funded by Australia) has useful data on the sector at its project office in Honiara, but this is not readily accessible at the national, regional or international level. The CSP undertook a "Community Snapshot Survey 2005" which provides data and analysis on the state of rural communities across the nation. As part of the CSP Community Snapshot, all village focus group meetings were asked to produce village maps and seasonal calendars. These maps and calendars (about 90) are a valuable resource that could be used as the basis for a national food security study. They build on the earlier work of the Wall and Hansell (1974) documents that were the only comprehensive national study of land resources in Solomon Islands undertaken at the conclusion of the British colonial administration. The village maps and seasonal calendars are filed and archived in the CSP offices in Honiara[22] and a copy of the Main Reports, maps and a Microsoft Excel version of the full Snapshot database is available on one CD. The CSP Agricultural Livelihoods Programme has also undertaken a number of domestic market studies and compiled reports on these which are listed in the references to this section.

FAOSTAT reports production data (1961 to 2007) for Solomon Islands which over a number of years has been based largely on FAO estimated and calculated data, particularly for staple food crops. FAOSTAT also produces a Food Balance Sheet (FBS) which is presumably based on the same estimated production data.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

Commodity trade statistics are reported regularly based on industry export reporting and customs data. However, production statistics are very limited or completely absent from official sources. No national agriculture survey or census has been conducted in over twenty years. The Ministry of Agriculture and Livestock do not collect data on production. No surveys, yield/crop cuts, area measurements or other measurements are made. Some data is available on specific commodities in donor funded project files, but this is not readily accessible for general use. The 2005/2006 HIES contains useful information on household expenditure on purchased food and on household produced food for home consumption and sale. However, these estimates are made based on questionnaires and a household diary which is completed over a single two week reference period. Therefore the data do not reflect possible seasonal variation in agricultural production, consumption and marketing activities.

[22] *Community Sector Program PO Box 1745 Honiara Solomon Islands Phone +677-27503 Fax+677-27504*

The Solomon Islands National Statistics office and the UNDP Pacific Centre, Suva have published in July 2008 an analysis of the 2005/2006 HIES which estimates basic needs poverty lines and food poverty lines and the incidence and characteristics of poverty in Solomon Islands. The 2006/2007 Demographic Health Survey reports some data on ownership of agricultural land and ownership of farm animals and on nutrition. The National Population Census 2009 includes questions on work/activity including producing goods for sale and for own consumption. It also includes questions on land tenure and household activities in fishing, and on involvement in growing food, cash crops and keeping livestock. The Census Report is expected to be published later in 2010. There is a clear need for up to date agricultural statistics, particularly production, consumption, and market information. Further, a real need exists for better management and storage of valuable information for easy access. The main obstacles to better production and reporting of agricultural statistics are lack of financial and human resources to undertake this work. Most surveys and census currently undertaken or planned are conducted with funding from development partners and with technical assistance provided by SPC and other agencies including PFTAC[23]. However, key informants also indicated that demand for such data at the national political level is not particularly high and therefore national resources are not prioritised for this work[24].

USEFUL REFERENCES AND SOURCES OF ARD INFORMATION

Solomon Islands Smallholder Agriculture Study (2006) volumes 1-5, AusAID, Canberra.
Community Sector Program (2006). *Hemnao, Solomon Islands, tis taem: Volume1: Provincial Profiles* by Hilda Kii, Hazel Lulei, John Foimua and Joe Rausi. Honiara, CSP.
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Community Sector Program Agricultural livelihoods (2009). *What's it worth: Estimates of value of fruit and vegetables in Solomon Islands.* Occasional Note-Marketing 11/09, Grant Vinning and Andrew Sale.
Community Sector Program Agricultural livelihoods (2009). *Using market research to make markets work better: value chain experiences in Solomon Islands.* Occasional Note – Marketing 17/09
Community Sector Program Agricultural livelihoods (2009). *An anthology of agricultural marketing research undertaken by the Agricultural Livelihoods Unit.*

[23] *The 2009 IMF Article IV Staff Report stated that: "Recent technical assistance from PFTAC has led to improvements in constant and current price GDP estimates. Revised estimates have been produced for 2005 to 2007, but await final analysis before being published. Currently, GDP estimates produced by the National Statistics Office differ from those used by the Central Bank of Solomon Islands. While limited data on formal employment can be obtained from the National Provident Fund, wage data are not compiled. In light of the inadequacy of labour statistics, the authorities plan to conduct a Labour Force Survey in 2011. A monthly consumer price index (CPI) is produced with a short lag (about a month), but covers only the capital Honiara. The weights of this index were revised in 2007, based on the results of the 2005-06 Household Income and Expenditure Survey. The authorities plan to compile a nationwide CPI, and have already compiled a list of goods to be contained in the basket. However, the timing of actual compilation is unclear due to lack of funds. TA has been provided on the development of an import price index, but due to resource constraints, there has been little progress in implementation. Solomon Islands does not participate in the General Data Dissemination System (GDDS) of the IMF"*

[24] *Quote "Data is generally demanded by donors, international agencies and community, but not by Politicians at national level. Even sectors do not have the strong demand or understanding of need for data for planning and monitoring. Hence data collection is not seen as a priority and not therefore adequately resourced. We need a clear mandate from the highest political level for sectoral data collection needs before we can make appropriate progress in this area".*

Kiribati

The country was visited by the consultant during 25-27 May, 2010.

Context

Kiribati is as an atoll nation spread over some 3.5 million square kilometres of the Pacific Ocean. Physically, it has some of the world's smallest islets, but also has - in Kiritimati (Christmas Island) - the world's largest atoll. The nation is facing numerous economic, social, demographic and environmental challenges, but the greatest challenge is the tyranny of distance. The 22 inhabited islands are spread over a vast ocean which poses considerable logistical problems for government services, including data collection. For a government official to travel from Tarawa to Kiritimati currently involves a flight via Fiji to Hawaii, with a one week delay in Hawaii before connecting to Kiritimati![25]

The country has limited natural resources and, for those natural resources it does possess (e.g. fisheries), insufficient capacity to exploit them for maximum national benefit. GDP per capita is the lowest amongst the Pacific Island Forum group and the economic outlook is fragile. Agriculture and fisheries represented about 3% of GDP in 2006, but it is generally thought that this figure considerable underestimates the contribution from the subsistence/informal sector. Agriculture and fisheries are vital for food security, sustainable livelihoods and for national economic growth. Copra remains the principal agricultural export commodity along with sea weed, fish and shark fins. Livestock production in the country is mainly at subsistence level, with pigs and free-range chicken being the main livestock kept.

Organisations concerned with agricultural data and key activities

There is no record of an agricultural census having been conducted in Kiribati and the main official source of agriculture data is that collected during the national Population Census conducted by the Kiribati Statistics Office (NSO). These are conducted regularly every five years, and the current census is in preparation and will be held on November 7, 2010. The NSO is currently planning the questionnaire and consulting with stakeholders (including those in agriculture) for priority data collection needs. Funding for the Population Census (estimated cost A$1.2 million) comes from Kiribati Government, UNFPA and AusAID, and technical assistance is provided by SPC.

In the past there have been some ad hoc surveys and also some questions on agriculture activities (food production and sales) were included in the 2006 HIES and should also be included in the next HIES which is planned for 2011. SPC are also supporting the NSO with the HIES. The NSO has 13 full-time staff with 4/5 trained statisticians. They have a reasonable budget and resources (hardware and software) for their core job and get additional resources for census activities (personal communication, Director of Statistics). Currently there is no national statistics strategy and the Director of the Statistics Office indicated that it can be problematic to get cooperation from all stakeholders. However, political interest in data and demand is increasing and there has been a slight increase in NSO funding. The NSO does an end of year seminar to explain to politicians about the data that is available and its meaning and relevance to decision making. This is helping create increased interest and demand. The NSO collate and publish trade data which they source from customs and copra export data from the Copra Society. They collect monthly data, but only publish on an annual basis. They have had assistance from PFTAC on National Accounts which included an assessment of non-monetary production. They have now started to record this separately (2010) for year 2006 (data from the HIES was used). They saw GDP rise by about 20% when revised to include non-monetary (subsistence and informal) into it (personal communication, Director of Statistics[26]). However, further capacity building will still be needed to

[25] *On 24 June 2010 Air Pacific resumed a weekly flight to Honolulu via Christmas Island, the flight has been restored after a lapse of two years.*

[26] *Monetary and non-moterary subsistence activities now are estimated to account for 25% of total GDP and have resulted in the estimated current price GDP for 2009 rising from A$96.4 million to A$155.9 million. In the old estimates for 2008 the "informal sector" was estimated to be valued at A$5.6 million, while revised estimates, largely based on data from the HIES, the value of the informal sector has now been estimated at A$57.0 million*

continue to improve the quality of GDP estimates. Employment indicators are not regularly available. The monthly retail price index (1996=100) is produced with a short lag (about a month), based on a survey in the capital (a national index is not available). There are no producer, wholesale, or trade price indices. Kiribati has been participant in the IMF General Data Dissemination System (GDDS) since 2004.

A number of reports have been produced by the Statistics Office, those from ad-hoc activities such as surveys and censuses, and annual reports from regular statistical collections. The office is in the process of organising theses reports so that they can be made available on the SPC Prism maintained website http://www.spc.int/prism/country/ki/stats/. However, when the website was accessed in June 2010 its recorded last update was 4 November 2009 and at this time only three publications were available for download: The HIES 2006, and the Census of Population and Housing 2005 Volumes 1 & 2. Other general economic and trade statistics are available on the website including production and export data for copra (up to 2008) and seaweed (up to 2007).

The agriculture division of the Ministry of Environment, Lands and Agriculture Development (MELAD) has relatively limited capacity and resources to collect agriculture data, but shows great interest and enthusiasm for doing this. They clearly recognize the need for good data for planning and monitoring and they are in the process of establishing dedicated staff and computer resources to store and manage what data they have. Their most significant undertaking is a national outer island survey (the Agriculture Survey Baseline 2010). The survey has been underway over the last couple of years and is collecting information on crops grown and livestock kept with a total enumeration of all households. The surveys are implemented on island by the Agriculture Assistant, who returns completed forms to Tarawa headquarters for data entry into Excel file. They have currently completed entry of 5 islands and have 13 more to go. This activity is funded by the Ministry with no external financial or technical support. The agriculture division under its agroforestry programme conducted a survey of pandanus, papaya and breadfruit (2008/09) and are working with SOPAC assistance to make digital maps (MapInfo) principally for coconut and mangroves. The quarantine division collects information on plant and animal imports (just volumes) and records this on spreadsheets. Their aim is to make a quarterly report every three months, but they are not doing a consistent job of compiling this at the moment. However, they are anticipating assistance from SPC to improve data collection and management. SPC has also provided them with a computer. Quarantine currently has 8 officers to cover the Airport and seaport and 2 officers at Kiritimati to cover the international airport there. They issue phytosanitary certificates for plant/animal/craft exports and have some data on volumes, but do not record this in their data base, but keep the certificates.

The Copra Society records tonnage of copra landed from all outer islands by island and by cooperative that produces it. They keep monthly records on a computer database and supply to the NSO when requested, usually on an annual basis. They also keep records of exports, but currently there is only maybe export once a year to Philippines (Australian Company- Holland Commodities, based on a tender sale). Kiribati exported about 1,000 tonnes last year. The Society sells the rest to KCMCL (copra mill); current price is A$300/tone.
The Ministry of Health and the NSO conducted a Demographic Health Survey last year with assistance from SPC. The data is still being processed and analyzed and the report should be due by end of year (2010) and will be published by the NSO. The Nutrition Section of the Ministry used to carry out some nutrition surveys, but currently does not have funds to continue this.

FAOSTAT reports production data (1961 to 2008) for Kiribati which over the years has been based largely on FAO estimated and calculated data, particularly for staple food crops.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

The Kiribati Development Plan 2008-2011 identifies, under the policy area Economic Growth and Poverty Reduction, the strategy to improve and update statistics and relevant information for planning and policy formulation (strategy 13, page 23). Both the NSO and the Agriculture Department are committed to improving collection and use of agriculture data but have limited capacity to do this. At the recent Kiribati National Food Summit it was recognized that there was not available relevant quality data to produce a food balance sheet and to monitor food security. Currently a government strategy is to encourage an increase in local food

production in the outer islands and to increase trade from the northern islands (e.g. Butaritari) to South Tarawa to feed the growing urban centre. The government has instituted a freight subsidy to traders to encourage marketing in Tarawa and anecdotal evidence is that there is now more established markets for some farm products. However, there is no market survey or price and volume data to assess the situation. Commendable efforts are being made by the Agriculture staff to undertake a national baseline survey, but this activity might have benefited from technical support from the NSO and could to advantage have worked together with the Nutrition staff of the Ministry of Health to add policy value to the information collected. Currently there is no substantive agriculture production data available. The Kiribati Statistics office and the UNDP Pacific Centre, Suva have published in March 2010 an analysis of the 2006 HIES which estimates basic needs poverty lines and food poverty lines and the incidence and characteristics of poverty in Kiribati.

Tonga

The country was visited by the consultant during 29 May to 3 June, 2010.

Context

The Kingdom of Tonga comprises 176 islands of volcanic and coral origin spread over a sea area of 700,000 square km. There are four main islands groups: Tongatapu and 'Eua, Vava'u, Ha'apai and the remote Niuas.The estimated population[27] of 102,724 persons live on 52 of the islands and with only 24% of the country's 650 km² land being arable resources are limited. The growth in urbanisation, being the result of rural migration from both the outer islands and Tongatapu itself, has put high pressure on the land, in particular around the capital Nuku'alofa where almost 30% of the country's total population is concentrated.

Agricultural production is still the predominant economic activity, accounting for about 25 percent of GDP, 70 percent of total merchandise export, and 40 percent of employment. Over 64 percent of Tongan households (10,102) are involved in agriculture, out of which 59 percent are subsistence, 38 percent are involved in subsistence agriculture with cash crops and only about 2 percent are fully commercial crop producers (Agriculture Census 2001). The agriculture sector therefore is important for employment, as a source of domestic food supply, for cash income, foreign exchange earnings, and for raw materials in processing and handicrafts. However the sector is under performing and the output has been in decline for a number of years. Considerable potential exists for improved performance. Tonga has a good growing climate and fertile soils, and is well placed to serve markets in both southern and northern hemisphere. The growing urban market also offers considerable opportunity for smallholder farmers.

Organisations concerned with agricultural data and key activities

The Statistics Department, which is under the jurisdiction of the Prime Minister's Office, is the central government agency mandated to collect, compile, analyse and disseminate statistics. It also has the role for coordination to avoid duplication, maintain compatibility between, and the integration of statistics compiled by other departments. The last Agriculture Census was conducted in 2001 and although there has been some discussion of implementing another census in 2011 there is as yet no firm plan for this. Trade data are generally considered quite complete (but with some inconsistencies) with source information coming from Customs data. Agricultural production data, however, is considered to be weak. The 2009 HIES (report expected late 2010) will provide some benchmark home production, consumption and sales data. The HIES data is collected through four survey rounds with four two-week diaries designed to take account of the major cropping seasons. The last Population Census was carried out in 2006 and the next is being planned for 2011. A DHS is also planned for 2011; both these surveys could be used to collect a minimum set of agriculture data.

Labour force data is also considered to be weak with the last formal survey being implemented in 2003. The SPC Prism supported website http://www.spc.int/prism/Country/to/Stats/ provides access to publications of the Statistics Department which includes an up-to-date Statistical Bulletin on CPI (Tongatapu Island) covering detailed monthly prices of most locally produced food crops, marine and animal products. Merchandised trade

[27] *SPC 2008 mid-year estimate*

data (up to 2009) is also available, but other agriculture data is outdated being sourced from the 2001 Agriculture Census. Tonga has participated in the International Monetary Fund's GDDS since May 2006.

The Statistics and Economic Unit, which is part of the Policy and Planning Section of the Corporate Services Division of the Ministry of Agriculture and Food, Forests and Fisheries (MAFFF), has the main role to collect data, compile data sets, analyse and publish this information. However staff resources and operational budget limit the work that can be accomplished. The unit currently has a compliment of two graduates and one diploma-level staff. They produce a quarterly market report – the latest addition is "Domestic Market Survey Report- fourth quarter, October-December 2009". Previously this report only sampled the central Talamahu Market, but this year's survey report has been extended and now includes data on roadside markets[28] in Tongatapu and the Utukalongalu Market in Neiafu, Vava'u. They hope to extend this survey further and also include the Ha'apai market. The report has information on: monthly and quarterly average weights in kg of common trade units of each produce sold at the markets; monthly and total quarterly supplies of agriculture produce in common trade units and in tonnes; monthly and quarterly average prices of agricultural produce sold in the market in price per common trade unit and in price per kg. The quarterly market survey report is distributed (hard copy[29]) to the Reserve Bank, Ministry of Finance, Statistics Department and the Talamahu Market Authority.

Currently no other agriculture survey is undertaken by the Statistics and Economic Unit, but the Extension Service does undertake an annual crop survey (usually in November/December) which records a visual estimate of area planted under the principal crops grown. This information and various other statistical data are reported in the Ministry's' Annual Report[30] . There has been no recent crop cut/yield measurements. There is data on gross margins for all crops (dating from about 2004/2005) which is currently being updated. The Ministry is also in the process of updating a "Compendium of Agriculture and Forestry Statistics" which used to be a biennial publication, but hasn't been published since the year 2000 edition and copies of this are rare! The MAFFF Biosecurity and Quality Management Division (which includes Quarantine) collect detailed data on imports of plant and animal products and exports of plant products. All data are inputted into a FilePro software database on a daily basis. Records can be sorted by product, date/month, and destination. The goal is to eventually make this data available through a website.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

Source data for agriculture production is generally lacking with no agriculture census since 2001 and no recent survey data available. All key ministries recognize the importance of timely quality data for agriculture which is the principal economic productive sector for the Kingdom. The Ministry of Finance indicated that they struggle to get data needed for economic policy analysis and that improving agriculture data availability and quality is a high priority. The Tonga Trade Department also expressed concerns on agriculture data availability indicating that this is a high priority need for effective trade facilitation and negotiations. The MAFFF also stressed the importance of improving capture and access to data for policy and planning and for monitoring the impact of their programmes, but lamented a lack of human and financial resources to undertake this work.

Currently the MAFFF do regularly collect and publish important data on domestic markets but have limited capacity to analyse this data to produce policy relevant information. The Ministry of Finance have adopted a strategic framework and matrix for monitoring development targets for implementation of the Sustainable Development Plan and each Ministry's Corporate Plan must now indicate how they will contribute to these targets. MAFFF is currently updating their Corporate Plan and including appropriate indicators. However, the ability to monitor these indicators will be dependent on relevant quality data being available in a timely way!

[28] *There are estimated to be more than 50 small market stalls mainly on Vuna Road from Ma'ufanga to Nuku'alofa and along Taufa'ahau Road from Nuku'alofa to Hu'atolitoli Prison at Vaini.*
[29] *Electronic copy can be obtained from the Statistics and Economic Unit, MAFFF, but this is not available from a website.*
[30] *Latest available 2008.*

Samoa

The country was surveyed by the consultant during 21 June to 1 July, 2010.

Context

Samoa is geographically compact by Pacific standards, with the two main islands (Upolu and Savaii) accounting for almost all of the total land area of 2,820 km^2, which is 43% arable and surrounded by an exclusive economic zone of 98,500 km^2. This compactness eases internal transport and public service delivery, while the natural resource endowment constitutes a solid asset base for agricultural, fisheries, and tourism development.
The agriculture sector (encompassing crops, livestock, forestry and fisheries) still offers some of the best opportunities for Samoa's development. Given the high proportion of people who are engaged primarily in the agriculture sector, and Samoa's relatively limited resource base, the agriculture sector is prioritised in the Strategy for the Development of Samoa (SDS 2008-2012) as central for broad-based economic growth. However, whilst the importance of the agriculture sector to the economy and rural livelihoods is recognised, the sector has yet to achieve its growth potential despite the government reforms to improve the enabling environment for business development.

Today larger-scale commercial agriculture is a small component of total agriculture, with coconut plantations (mostly government owned) surviving from the German colonial period accounting for most of the (minimal) output, whilst subsistence agriculture accounts for nearly half of agricultural output. The agriculture sector (including fisheries) contribution to GDP continues to decline and fell from an estimated 11.8 percent in March 2009 to 10 percent in March 2010.[31]

Organisations concerned with agricultural data and key activities

The Samoa Bureau of Statistics (SBS) has been a standalone department since a 2008 reform moved it from under the Ministry of Finance. It is now responsible for all surveys and census, the National Accounts, trade statistics, CPI and the domestic (Fugalei) market survey. Preparation of Balance of Payments statistics will also move in due course to the SBS. Generally the Government has recognised the importance of statistics and the Bureau has received more recognition and some improvement in budget. Currently government budget contributes significantly to national survey statistics – government fully funded the 2008 HIES and co-funded the 2009 Agriculture Census with Australia (estimated contribution: Samoa SAT$300,000 and AusAID SAT$ 400,000). A national Population Census is now being planned for 2011, but with an estimated cost of SAT$ 2.7 million external funding support will be needed.

Following the 1999 Agriculture Census annual surveys were made in years 2000, 2002, 2004 and 2005 and these are available on the SBS website http://www.sbs.gov.ws/. No further annual surveys were implemented prior to the 2009 Agriculture Census. Data from this census is still being processed; it is anticipated that preliminary tables will be available later in 2010 or 2011. The Bureau has just completed the preparation of the 2008 HIES report along with a national poverty analysis report based on the HIES with assistance from the UNDP Pacific Centre. The SBS Corporate Plan 2008-2012 sets out goals, identified outputs and strategies and performance indicators (Section 7). It targets to produce an annual Agriculture Survey and Agriculture Census every 10 years, a Population Census and HIES every 5 years, and DHS every 2.5 years.

The Ministry of Agriculture Forestry and Fisheries (MAFF) cooperates with the SBS in the implementation of Agriculture Census and surveys and receives a budget accordingly. The Policy and Planning Division is responsible for data collection, management and analysis and currently has eight graduates on staff, but the division's budget has been stagnant over recent years and it is delegated many tasks which restricts the amount of statistical work it can accomplish and they recognise that this does limit the evidence-base for their policy work. The division has one officer responsible for preparing Food Balance Sheet and they highlight the importance of this composite indicator for Food Security and for monitoring the implementation of the National Fruit and Vegetable Strategy. The MAFF publish an Annual Report, but recent editions contain no relevant

[31] *Samoa Bureau of Statisitcs Gross Domestic Product March 2010*

agriculture statistics. The Ministry has an updated Farm Management Handbook 2009 which has crop and livestock profiles and gross margins.

The Central Bank of Samoa (CBS) has now relinquished responsibility for the Fugalei Market Survey to the SBS, but retains a database of information up to 2008 which can be made available. The Bank publishes on its website http://www.cbs.gov.ws/ summary tables based on the market surveys and also regular monthly reports and bulletins on Foreign Trade, Economic Performance, Exchange Rate development and a Quarterly Bulletin which include some analysis of the data.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

Currently foreign merchandised trade data (based on Customs data) are available and accessible both from the SBS and CBS. The two data sources have shown inconsistencies, but this is because CBS export data is based on export licensing forms and CBS exclude Yazaki Company (re-exports) in their figures. The SBS trade data is now recognized as the "Official Source". Agriculture Census have been carried out on a 10 year interval (1999 & 2009), but some delay is being experienced in presentation of the latest census report. Following the 1999 census four annual surveys were implemented ending in 2005. The explanation from the MAF representative for why further annual surveys were not implemented was that the 1999 sampling frame was no longer considered valid after five years. It is anticipated the annual agriculture surveys will be implemented now following the 2009 Census. However the regular survey/census data has not always provided sufficient information for specific programme planning purposes and has to be supplemented with tailor-made surveys.[32]

Whilst regular domestic market data is available this is based only a weekly Friday survey of the central Fugalei market and reports on a basket of crops that were established several years ago. During the period 2006-2007 CBS did also survey some popular roadside markets and the Savaii market, but found that these accounted for a relatively small proportion of the volume marketed and so the cost of collection outweighed the value of the data. However, there are grounds for re-assessing these market sites following the construction of a new market house in Savaii and a noticeable increase in roadside market trading. Furthermore, effective monitoring of the implementation of the National Fruit and Vegetable Strategy, which has a principal aim of import substitution, will require solid domestic market data.

Vanuatu

The country was visited by the consultant during July, 2010.

CONTEXT

Vanuatu's overwhelmingly rural population estimated at 243,304 in 2009[33] *is dispersed across more than 80 islands, which stretch longitudinally over 1,300 km of ocean in the southwest Pacific. The country has a total land area of about 12,000 square kilometres with an exclusive economic zone that covers a sea area 60 times as large as its land surface. The two largest islands of Espiritu Santo and Malekula measure 4,248 and 2,053 square kilometres, respectively, and together with the next six largest islands comprise 87 percent of the total land area.*

A productive agriculture sector is important for the national economy, vital for food security and rural poverty alleviation, and also provides links to downstream industries such as agricultural processing. The agriculture sector accounted for approximately 18.6 percent of GDP and almost all merchandise exports in 2008. However, the official GDP recorded share of agriculture and fishing understates the contribution of these sectors to living standards in Vanuatu. Around 76 percent of the population live in the rural areas and grow food for subsistence and cash needs. Many in the urban areas also supplement their cash incomes by gardening.

[32] *Preparation for a World Bank supported Agriculture Project will require a more detailed assessment of the livestock industry.*
[33] *2009 Census Housing Listing Counts, Vanuatu National Statistics Office, October, 2009*

Agriculture crop and livestock farming consists of two sub-sectors: subsistence smallholder farming, and (some 30-50) larger commercial farms and plantations which are mostly located on the islands of Santo, Malecula, Epi and Efate.

ORGANISATIONS CONCERNED WITH AGRICULTURAL DATA AND KEY ACTIVITIES

The Vanuatu Statistics Office Act 1983 officially establishes the VNSO as the Government institution responsible for statistics and defines the scope of statistics to be collected and empowers the VNSO to conduct census whenever appropriate. Prior to the Comprehensive Reform Program, which started in 1996, the VNSO was part of the National Planning Office, under the direction of the Prime Minister's Office. As a result of the Reform Program, the VNSO is now a separate Department under the Ministry of Finance and Economic Management (MFEM).

The VNSO has published its latest Strategic Plan and Forward Work Program 2009-2014 which is available for download at http://www.spc.int/prism/vutest/index.htm . The VNSO vision sets out its aspiration to coordinate and lead activities in the national statistical system in Vanuatu to enable all departments in the Vanuatu government and other stakeholders to understand and use effectively the data for informed policy decision making. Some key strategic objectives to achieve in 2010 are to establish a Statistical Advisory Committee which will comprise of government, non government organizations and privates sector; present a review of the Statistics Act to Parliament; and establish a Statistical Leadership and Coordination Section to provide statistical coordination across government to improve data dissemination. The VNSO has a core budget equivalent to a little over half a million US$, but this is supplemented by additional funds from international organizations and donors to support projects such as the Population and Agriculture Census and the Household Income and Expenditure Survey and other ad hoc surveys. The latest Agriculture Census was in 2007 and the one prior to that was in 1993. The VNSO strategy indicates future Agriculture Census will be in 2017. In addition to publishing the 2007 Agriculture Census Report, the VNSO have done further analysis and prepared reports (awaiting final publication) of subsectors such as cash crops, land-use, fisheries and forestry. They also have included an agriculture module in the 2009 Population Census and will also include in the HIES now being commenced in 2010/2011, this will involve two to three surveys and diaries to account for seasonality of household activities and spending patterns. Also being planned are some subsistence agriculture surveys and some surveys to evaluate impact on households from the recently completed new roads particularly on Efate. However, domestic market activity (volume and prices) and labour force and employment data is considered to be weak and there are no regular statistics on the labour market with the last formal survey being implemented in 2000 and this only sampled businesses with turnover of 4 million Vatu and above.

The VNSO, together with Vanuatu National Cultural Council, is also participating in an Alternative Indicators of Well-Being for Melanesia project which aims to enable the island countries of Melanesia to evaluate the concept of wellbeing in a more holistic way. The comprehensive set of indicators recognise the traditional economy and other non-monetary values contributing to quality of life in the islands, which include free access to land and natural resources, community vitality, family relationships, and culture. The indicators complement existing GDP data collected through the Vanuatu National Statistics Office. They have been designed to be clear, unambiguous, and helpful to strategic and applied policy making. As policy and project screening tools, the newly established indicators should be useful for selection of policies and programs aligned with improving the overall well-being of Melanesian peoples at the regional, national, and provincial levels. The VNSO is currently running a trial survey of individual well-being to be completed in January 2011. The survey covers access to customary land, knowledge and practice of culture, community ties, and use of time and it can be linked through the sample frame to the HIES and the 2009 Population Census. Although this survey will not serve as an official baseline for Ni-Vanuatu wellbeing, it is anticipated that it will be instrumental in helping cement the need for collection of such data at the national and provincial levels.

The VSO also publishes monthly trade reports and statistics on production and value of commodities (Copra and Cocoa) with data being supplied to date from the industry bodies or Vanuatu Commodity Marketing Board (VCMB)[34] . Vanuatu has participated in the IMF's GDDS since 2004.

The Department of Agriculture of Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF) currently does not have the capacity and resources to collect regular agriculture production data, but has implemented occasional ad hoc surveys including an assessment of coconuts to inform on potential biofuel development for the electric power company.

The Reserve Bank of Vanuatu publishes Quarterly Reviews going back to 2004 which include data (2005-2010) on principal agricultural commodity exports (volume and value) of copra, coconut oil, cocoa, kava, beef and timber (source data from VNSO) and on cattle slaughtered by abattoir (numbers and weight) with source data from Val Pacific Ltd. and Santo Meat Packers.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

The VNSO is efficiently organized and has a strategic plan in place for collection of key national statistics. With a fairly recent Agriculture Census there is relevant basic structural data on the sector available and some attempt has been made to undertake deeper analysis of the data to improve the policy relevance. However the data lack quantity information on production of the key crops and there is no capacity (or resources) within the sector ministry to gather this kind of information. It is uncertain if any annual agriculture surveys will be implemented and thus information in the census will soon become dated. However, the regular programme of HIES being implemented and the 2009 Population Census collect information relevant to the agriculture sector such as: land tenure (customary, rural lease, urban lease, informal arrangement, other); number of households having main source of income from sales of fish/crops/handicrafts; number of livestock owned; number of households growing cash crops (noni, kava, coconut, cocoa, coffee, sandalwood, pepper and vanilla). The 2009 Population Census is thus providing a good basis for a sampling frame for future smallholder agriculture surveys if resources are available to implement them. The HIES is implementing two to three surveys and diaries to account for seasonality of both production (household activities) and spending patterns. Vanuatu also recognizes the significant importance of the traditional economy and is actively trying to measure its significance both for the economy (better capture non-monetary and informal activity which is very large) and for wellbeing (capturing cultural and social value as well as economic).

A system for a quarterly market survey has been prepared which is designed to collect quantity of produce (crops, fruits, vegetables, firewood, and livestock) brought to market, quantity sold and prices. However, this has not to date been implemented because of insufficient resources. The VNSO recognize that formal market information is generally lacking and consider that this is one area that has been neglected considering its importance to farmers and for policy makers.

Federated States of Micronesia (FSM)

The country was visited by the consultant during 8-11 November, 2010.

CONTEXT

Located in the Western-central Pacific, the Federated States of Micronesia is a sovereign nation consisting of four administrative divisions or States, in geographic sequence from west to east - Yap, Chuuk, Pohnpei and Kosrae. The country has a close relationship with the United States of America through the Compact of Free Association, through which substantial funds are provided for the government. The country is comprised of 607 islands with land elevation ranging from sea level to the highest elevation of about 2,500 feet (760 m). FSM's total landmass is 438 square miles (702 km2), with a declared Exclusive Economic Zone covering over 1 million square miles (1.6 million km2).

[34] *In 2010 the Government revoked the VCMB Act and decided to close it down, thus this body will cease to be a source of data.*

Of FSMs population of 103,000[35] an estimated 80,000 live in the rural areas of FSM's high islands and atolls. For families living outside the more urbanized areas of each state, all are engaged in some form of land based food production to varying degrees. The agriculture sector is, therefore, a key part of livelihoods in the FSM economy. Gross Domestic Product (GDP) for non-monetary (largely subsistence agriculture) is estimated at27.2% of the 2008 total current price GDP 0f US$ 253.5 million[36]. FSM agricultural exports in 2007 were valued at $3.1 Million[37], although this figure is thought to be an under estimate. The biggest item of exports in 2005 was offshore fish, at an estimated value of $11.2 million (69% of total exports).

Whilst Agriculture is not a major contributor to export receipts it does provide livelihood and employment to much of the population. However, the agriculture sector has been typified over the last 20 years by the lack of a consistent vision and by expensive failed government investments. Policy and investments have been made in relative isolation, with little or no data, and without clear reference to the needs and priorities of either rural communities or the private sector.

A critical constraint for policy and planning is that data on the primary economic sector to support decision making are particularly weak; there are no indicators on agricultural production, limited information on agricultural exports, and coastal fisheries information is also generally poor. Improved data is now vitally needed to evaluate the status of the agricultural, forestry and fisheries sectors in FSM and for sector planning. The Government has therefore accorded a high priority to implementing an agriculture census to provide data on the structure and characteristics of agricultural activities (including forestry and fisheries) which would provide bench-mark data for use in national accounts estimates and provide a sampling frame for future surveys of agriculture. The census information would also be useful for the promotion of the food and agriculture sector and of rural development.

ORGANISATIONS CONCERNED WITH AGRICULTURAL DATA AND KEY ACTIVITIES

The Statistics Division, which is now part of the recently established Office of Statistics, Budget and Economic Management, Overseas Development Assistance, and Compact management (SBOC), is the key national agency responsible for FSM statistics. Before 1999, the branch offices in the four states (Yap, Chuuk, Pohnpei, and Kosrae) had been operating independently from each other. They were regulated and budgeted by the respective state governments and each collecting and producing their own statistics. As such, it was often difficult to aggregate these state figures to a "national" figure. The governments recognized the need for single national indicators. This need was further compounded by international requests for such information. In 1999 a memorandum of understanding (MOU) was signed by the national government and the state governments, centralizing statistical operations under the national office. The statistics offices in the 4 states are now operating under the national budget, statistics collected by these states get sent to the National Statistics Office for compilation, thus producing statistics representing both the States and National Government. The Statistics Division (National Statistics Office) is based at the capital (Palikir) with 8 staff, while branch offices in the 4 states are manned with 3 working staff each (source: Statistics Division website).

The Division of Statistics of SBOC publishes an International Trade Report (latest 2006, published in August 2007) and a Statistical Yearbook (latest October 2008) which includes data on imports and exports at national and state level. Publications are available from the website http://www.spc.int/prism/country/fm/stats/ . Import statistics are compiled by the Division of Statistics from data supplied by the Division of Customs and Tax, FSM Department of Finance and Administration which uses PC/Trade software installed in 2003/04 in their national and branch offices and data compilation is linked directly to custom assessment declaration imputes, thus providing improved quality for data on value of imports. However, data on quantities are more

[35] *Preliminary counts from the 2010 FSM-Wide Census of Population and Housing indicate a total population of 102,624 which implies a decrease from the 2000 census total population of 107,008 due to out-migration (Source: SBOC)*

[36] *FSM Fiscal Year 2008 Economic Review, US Department of the Interior Office of Insular Affairs and GS Graduate School, Pacific Islands Training Initiative (August, 2009).*

[37] *Statistical Yearbook Federated States of Micronesia 2008, Statistics Division, FSM Office of SBOC*

problematic due to conversion and insufficient documentation. Commodity goods are classified by the 6 digit (2002) Harmonized System (HS).

FSM does not require exporters to complete an export declaration to Customs, therefore the Division of Statistics uses a number of other data sources to estimate exports which include for agriculture products: Quarantine records (estimated from volumes and average FOB prices collected from selected exporters in each state); and the Coconut Development Authority (for copra exports). In some cases data sources are incomplete and so estimates are made for missing data based on averages for months in the same year for which full records were available.

The Statistics Division has implemented Population Census (2000, and 2010) and HIES (2005) which include some limited information relevant to the agriculture sector and another HIES is being planned for 2011. However no official agriculture census or survey data is available for FSM. Thus structural data on the sector and official production data are not available.

The Lands and Environment Division of Resources and Development Department (national government agency) have implemented a Food Security and Vulnerability survey with assistance from SPC. The survey was to collect baseline data that would be available to assist monitoring of impact and adaptation to climate change. The survey covered 10 outer islands from the three states, Pohnpei (3 islands), Chuck (4 islands), and Yap (3 islands). Kosrae state has no outer islands. The survey sample target was to cover 100 households from each island, but on some islands this was more than 100% of the resident households. The survey includes questions on sources of income, time use and land access which are relevant to agriculture sector activities. Data from the survey is currently still being analysed.

The Agriculture Division of the Resources and Development Department (national level) does not have any capacity to collect agricultural statistics at state level. The agriculture responsibility at state level falls under the Economic Affairs Office for each state, but currently no agricultural data is being collected. In the late 1960's (under USDA) a national agriculture survey was conducted, but the data was never analysed or published. The extension services in FSM is now a responsibility undertaken by the College of Micronesia Land Grant Program which in the past has monitored agricultural production from farm surveys, but this is no longer continued due to lack of human capacity and financial resources. Apart from a few ad hoc surveys, which include student thesis reports, there is little or no data on the agriculture sector.

The Coconut Development Authority (CDA) does provide data to SBOC on copra production and exports, but copra production is now very small having fallen from a peak of about 8,000 short tons in the 1980's to a current level of about 500-700 tons. There have been no copra exports since 2004.

The Environmental Health and Preparedness Unit (EHPU) of the Department of Health and Social Affairs collect administrative data on imports and exports of processed food products (mainly fish of various kinds), but also other foods. The primary purpose is to ensure food safety quality, but the data includes the nature of the product and the quantity. This collection is done at all sea ports and airports in all four states. The SBOC are interested in this data to compliment that collected by Quarantine which is mainly for fresh (un-processed) products as they believe the informal trade in cooked food products is very significant. The EHPU data goes back about five years, but is currently only in paper records and not entered into an electronic database.

STATUS AND ISSUES WITH AGRICULTURE DATA PRODUCTION, ANALYSIS AND REPORTING.

The sources of agriculture data to the National Statistics Office would normally be administrative data supplied from the sector (Customs, Quarantine, and CDA etc.) and census and surveys carried out. However the data from the State level administration is very weak. Whilst there is some data on imports and exports, it is not complete or timely. In contrast, there is little or no data on production, especially home food production (data on coastal fisheries is also poor, but that on offshore is considered good). Whilst the Statistical Yearbook 2008 provides data on selected local agricultural produce by the local market by quantities (lbs per annum) and by

state for the years 1998 to 2008 there is no regular collection or publication of domestic market information for agriculture products (prices and volumes) as no domestic market surveys are implemented.

There is currently no agriculture census and only very limited ad hoc survey information making the agriculture data system in FSM extremely weak, but there is interest at both national and state level to improve this. There is strong interest amongst stakeholders to implement an agriculture survey/census as soon as possible.
The institutional and political set-up in FSM is a challenge for effective integration and coordination of the national statistical system. To date there is not an effective national strategy in place and none to integrate agriculture statistics. The links and relationship between national statistics and state administration are quite loose and thus information is neither commanded nor necessarily provided. Greater awareness is needed at all levels of government and by all stakeholders of the value of good data and statistics for evidence based decision making. Currently the roles for data collection, analysis and dissemination are not clearly defined.

ANNEX 1
List of people met

Solomon Islands
John Harunari, Undersecretary, Ministry of Agriculture and Livestock (MAL)
Titus Sura, Planning Officer, MAL
Patteson Akipu, Director, Quarantine, MAL
Jimmie Saelea, Director, Research, MAL
Louisa Baragamu, Manager Economic Research and Statistics, Central Bank of SI (CBSI)
Tepora Vavataga, Research Analyst, CBSI
Owen Hughes, Community Sector Project
Grant Vinning, Agricultural Livelihoods Unit, Community Sector Project
Henri Risoni, Statistician, National Statistics Office, Ministry of Finance
Dr Chris Becha, Director, Department of Policy and Planning, Health Ministry
Baakai Iakoba, Medical Statistician, Health Ministry
Alfred Ramo, Director, Commodity Export Market Authority
Andrew Vijay, Director, Economic Division, Ministry of Development Planning & Aid Coordination

Kiribati
Keteti Toto, Acting Secretary, Ministry of Environment, Lands and Agriculture Development (MELAD)
Kinaai Kairo, Director, Agriculture, MELAD
Tianeti Beenna, Assistant Director, Agriculture, MELAD
Tearimwa Natake, Head of Agriforestry, MELAD
Erati Teremeti, OIC Livestock, MELAD
Taere Ratieta, Livestock Assistant, MELAD
Teaaro Otinea, Head of Plant Protection and Quarantine, MELAD
Taan Teraira, Information Assistant, Extension, Information and Training Section, MELAD
Eretii Timeon, Nutritionist, Ministry of Health
Teebora Bokai, Finance Manager, Copra Society
Tekena Tiroa, Director of Statistics, National Statistics Office, Ministry of Finance
Michael Andrews, Economic Statistics Adviser, IMF

Fiji
Inoke Ratukalou, Acting Director, Land Resources Division, Secretariat of Pacific Community
Marita Manley, Policy Adviser, SPC
Tim Martyn, Resource Economist, SPC
Andrew McGregor, Agriculture Consultant, Director KOSIGA LTD.

Tonga
Viliami Manu, Acting Director, Ministry of Agriculture Forestry, Fisheries and Food (MAFFF)
Emanuele Moake, Acting Director, Corporate Services, MAFFF
Kalati Hafoka, MAFF
Leody Vainikolo, Coordinator EU Stabex Projects, MAFFF
Sione Foliaki, Head of Quarantine Division, MAFFF
Vaha'I Lui, Senior Agriculture Officer, Policy and Planning Division, MAFFF
Elisaia Ika, Agriculture Officer, MAFFF
Pita Tafatofua, Agriculture Consultant
Finau Ata'ata, Head of Statistics, Department of Statistics, Office of the Prime Minister
Viliami Ika, Health Planning Officer, Ministry of Health
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[38] *The people listed in Vanuatu were met during consultations for an Overarching Sector Policy*

ANNEX 2
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ANNEX 3
Menu of Indicators for Agricultural Statistics proposed in the Global Strategy

	Indicator	Data Requirements	Data Sources	Technical Notes
	Sector Wide indicators for agriculture and rural development			
1	Gross Domestic Product (GDP)—		Censuses and surveys of firms, farms, and households for small holders.	Value added should include unreported activities as well as the value of informal or small scale operations. Annual estimates between census or surveys based on extrapolations based on other indicators.
2	GDP growth from Agriculture value added.	Estimates of total production and value for all commodities produced in the country; including that from small holders/household plots minus estimates of the cost of inputs such as seed, feed, energy, fertilizer, labor, etc. Agriculture includes forestry and fisheries	Censuses and surveys agricultural enterprises, farm and rural households, administrative and processor. data	SNA concepts followed. Problems include estimation of output consumed by the household and the annual coverage of all commodities for which only periodic census data are available. Annual estimates made using previous census and other administrative data if available.
3	Amount of public spending on agriculture, subsidies, and infrastructure	Government budget allocations, and spending related to agriculture. Agriculture includes forestry and fisheries	Ministry of Finance, National Accounts, Planning commissions, Donor reports	The definition for public spending on agriculture should follow the UN Classification of Functions of Government (COFOG) for agriculture
4	Amount of public spending on rural infrastructure including health and education	Government budget allocations, and spending related rural areas	Ministry of Finance, National Accounts, Planning commissions, Donor reports	Rural defined using national description
5	Change in Investment in capital stock	Inventories of machinery and equipment owned by agricultural holdings, buildings such as milking purposes, animal breeding stock, area of semi-permanent crops such as trees and vineyards, number of trees and vines	Agricultural resource surveys of holdings and agricultural enterprises	Machinery and equipment inventories should be by purpose (tillage, harvesting, etc.) and size
6	Demographics of agricultural and rural population	Rural population and number of rural households, , number of agricultural households and population living in them, age and education levels. Agriculture	Census of Population, Census of Agriculture, Household surveys, administrative records	Rural defined using national description

	Indicator	Data Requirements	Data Sources	Technical Notes
		includes forestry and fisheries		
7	*Rural poor as a percent of total poor population*	*Household income and consumption estimates for national and rural poverty lines. Purchasing Power Parities for comparisons across countries*	*Household Surveys. International Comparison Program for comparisons across countries*	*Countries should use poverty estimates based on PPPs and extrapolate between ICP benchmarks*
8	*Rural hungry as a percent of total poor population*	*Household income and food consumption estimates for national minimum energy requirements.*	*Household Surveys. International Comparison Program for comparisons across countries*	*Countries should use hunger estimates for monitoring food deprivation levels*
9	*Food production index*	*Area, production and yield for food crops, livestock numbers and production of meat, milk, eggs, fish captured and cultured, and other food products, non-food use of food products, food imports and exports*	*Agricultural Census, surveys of agricultural enterprises, processors, fish landings, administrative data such as imports, exports. Food Balances and Household consumption surveys*	*Follow FAO guidelines for inclusions and exclusions*
10	*Change in value of Trade—imports and exports*	*Imports and exports—quantities and values of agricultural products including fishery and forest products*	*Customs inspections—in some countries the customs offices collect the data which then are turned over to the national statistical office for compilation*	*National statistical offices should collaborate with customs officials to ensure coding and classifications follow international guidelines*
	Indicators for subsectors of agricultural and rural			
11	*Productivity of Crop production as measured by crop yields*	*Quantity harvested per unit of area such as hectare and area harvested. Area harvested, distinguished between irrigatedharvested crops and rainfed harvested crops*	*Census of Agriculture, crop cutting surveys. Production sample surveys, processor surveys, such as oil seed crushers, cotton ginners*	*Difficult to measure with mult-cropping or with crops that can be harvested > once a year. Crop cutting can over estimate yields*
12	*Change in components of crop balances*	*Area Harvested, Quantity harvested, quantities imported/exported, change in stocks, quantities by utilization such as food, bio fuels, own consumption, for every crop including those produced for fiber and oil*	*Surveys of agricultural enterprises, administrative data on trade, processors by utilization, household surveys for own consumption*	*Crop balances should reflect the growing cycle and marketing year which could be different from the calendar year.*

	Indicator	Data Requirements	Data Sources	Technical Notes
13	Livestock value added	Estimates of quantity and value of production of meat, and poultry, milk, eggs, by products such as hides and skins, wool mohair minus costs of inputs such as feed and replacement stock	Surveys of agricultural holdings, enterprises such as slaughter plants, dairies, processors. Household surveys for own consumption	Own consumption should be included, difficult to measure.
14	Change in components of Livestock and poultry Balances by species	Number of animals born, acquired, slaughtered, deaths from disease. Number of animals by purpose such as breeding, meat, milk, wool, and by age breakdowns relevant to specie. (see FAO 2010 Census)	Surveys of agricultural holdings at least annually but more often for species with more frequent births during a reference period. This ranges from annually for cattle to monthly for egg production.	Data collection intervals should reflect the reproductive cycles. This suggests annual for cattle, semi- annual for pork, quarterly or shorter for poultry, milk,
15	Change in productivity of Capture Fish production	Quantity of fish taken by unit of fishing effort; Scientific estimates of fish stock and exploitation rates;	National fishery surveys, surveys at landing sites, on-board observers, national, regional and global assessment results;	
16	Change in productivity of aquaculture	Estimates of quantity and value of production of fish by species minus costs and quantity of inputs such as seed, feed and fertilizers	Surveys of aquaculture enterprise, and holdings, aquaculture census, market certifications,	
17	Change in components of fish balances	Quantities and value of captures form coastal and offshore waters, rivers and lakes including non-landed catch; Quantities and value of products from aquaculture; utilizations including own consumption and discards, imports and exports, inputs such as seed and feed; outputs such as stocking; for each aquatic species	National fishery surveys, fishery census, aquaculture census, surveys of fishery and aquaculture enterprises, , processors, market information, administrative and inspection sources	See CWP Handbook, FAO coding and classification
18	Change in components of forestry balances	Quantity and value of removals of products from forested areas and respective utilizations	Appropriate ministries, satellite imagery, price surveys or processor data	
19	Commodity Price indexes	Market reports of prices being offered by commodity and location. Prices received by the	Market observers, Surveys of enterprises, agro enterprises purchasing commodities	Care needed to ensure units of measure for pricing are comparable

	Indicator	Data Requirements	Data Sources	Technical Notes
		enterprise at the first point of sale,	from agricultural enterprises	
20	Consumer Price indexes	Monthly/seasonal prices paid by the consumer	Consumer Price Index,	Care is needed to ensure highly seasonal products do not distort the price series.
21	Early warning of change in food security	Monthly/seasonal prices paid by the consumer	Windshield surveys of crop conditions, amount of precipitation, satellite imagery of vegetative indexes, changes in trade data, animal disease outbreak	These do not have to be statistically rigorous, mainly to provide an early warning that other interventions are needed
	Climate Change, land, and the environment			
22	Change in Land Cover and use	Land Cover Classification System (LCCS), Area and geo-referenced for Cultivated land, Grass/pasture, inland water, marine water, wetlands, shrubland, woodland, fallow/idle cultivated land, barren land, urban/developed areas, areas equipped for irrigation.	Land use surveys, satellite imagery. Geo referenced data on economic situation of agricultural holdings needed to understand effect of policy decisions on land use.	Ground truth data required to provide more detailed breakdowns of cultivated land, especially for crops in small plots. Difficult to apply in detail where multi- cropping is used.
23	Change in proportion of land area covered by forests, rate of deforestation	Area geo referenced to map materials	Ministry responsible for forestry, satellite imagery	Follow LCCS classification
24	Percent of land and water area formally established as protected areas	Land and water area and geo referenced to mapping material	Responsible ministry—satellite imagery	Follow LCCS coding with expansion covering inland and marine water bodies
25	Irrigated land as percent of total cropland Productivity of irrigation	Total cropland and area irrigated by source of water for irrigation—(surface water, groundwater, treated wastewater, etc.) - by method (surface, sprinkler, localized irrigation) Crop yields from irrigated land compared to yields from non irrigated areas.	Agricultural Census, other crop related surveys or water user survey	irrigation refers to the artificial application of water to assist in the growing of crops (and pastures). Can be done by letting water flow over the land ("surface irrigation"), by spraying water under pressure over the land concerned ("spinkler irrigation"), or by bringing it directly to the plant ("localized irrigation")
26	Withdrawal of water for	Area under irrigation, number of irrigations,	Appropriate ministries, special studies or surveys	Should include both surface and ground water. Coding and

	Indicator	Data Requirements	Data Sources	Technical Notes
	agriculture as a percent of total water withdrawal	irrigation intensity and requirements by crop, water withdrawal and turn over rate for aquaculture consumption, per capita consumption by people and animals	to estimate water use in agriculture and aquaculture, surveys of aquaculture enterprises and holdings.	classifications should be defined
27	Change in soil loss from watersheds	Reduction in crop yields, reduction in area of cultivated land	Appropriate ministries, geo referenced data with satellite imagery	
28	Change in affect of inputs on the environment	Fertilizer, pesticide, and other chemicals applied to the soil, water bodies, and plants by type of crop and watershed area, stocking	Agricultural census and or follow-up surveys to measure fertilize and chemical use, tillage methods	Data should be geo referenced to land cover and use
	The agricultural and rural economy			
29	Number of family and hired workers on the holding	Include Unpaid labor of the operator of the holding and family members plus number of hired workers	Labor force surveys of holdings	Need to establish standards for minimum ages of workers and the number of hours worked per week to be considered a worker. Need to define reference period Need to ensure female workers are counted
30	Number of household members employed by farm and non farm	The employment status for work off the agricultural holding for each household member	Labor force surveys—household surveys	Need to distinguish defined employment from unpaid household service work such as domestic chores.
31	Change in Farm and Rural non farm household income from all sources	Income to the household by sector, crop, livestock, etc. Income from investments or employment outside the agricultural holding	Rural Household Survey.	Rural to be classified using range in population density using national definitions
32	Percent of rural population using services of formal banking institutions	Total number of rural households, number using credit or savings services	Central Bank or commercial banks, special surveys, agricultural census	
33	Change in sales of agro enterprises	Sales, net profits of enterprises providing services to agriculture	Special surveys	Use standard accounting principles

ANNEX 4
SPC Working Draft of Agricultural and Forestry Minimum Development Indicators

Indicator	Purpose	Importance	Links to national/regional/international initiatives and strategies	Availability?
Essential				
Proportion of household income from agriculture and forestry activities (disaggregated by income from subsistence and income from sales)	LRD works to strengthen the capacity of agriculture and forestry services to support the livelihoods of people working (paid or subsistence) in these sectors. This indicator measures the contribution of these sectors to livelihoods.	The level of income generated by these activities is a crucial measure of their contribution to people's wellbeing.	MDG 1 (poverty and hunger)	National accounts (contribution to GDP?) HIES (but not available frequently enough)
Number of people (disaggregated by gender and youth, formal and informal) engaged in agriculture and forestry activities	Measure of the contribution of the sector to employment in countries.	Agriculture and forestry are often described as the backbone of the rural economy. Need to confirm this with evidence and monitor changes particularly for young people.	MDG 1 (poverty and hunger) Agriculture and forestry may be the only source of income (subsistence or cash) in certain locations	Census (but not available frequently enough) HIES (but not available frequently enough)
Volume and value of domestic production of agriculture and forestry products	Necessary for measuring the indicator above. Useful for monitoring the relative importance of different commodities and crops to national economies.	Essential for measuring food security. Important in assessing how climate change will impact these sectors. Most of our work centres on assisting governments that help communities with production issues but without this baseline information we cannot gauge objectively where we should prioritise beyond the knowledge of the technical staff and country priorities.	Pacific Plan priorities	Agricultural census (but not available frequently) Can be estimated from HIES (not available frequently enough) Ministry of agriculture and forestry assessments and reports ADB have estimated this for some countries (from national accounts?)
Area of arable, forested, reserved/protected land, as proportion of	Provides an indication of how much land is available for agriculture and forestry. Necessary for monitoring	Useful to monitor proportion of available land being used for agriculture and forestry purposes.	Links to Pacific Plan Land Management and Conflict Minimisation Initiative Feeds in to monitoring for UNCCD, UNFCCC	Available for some countries through census information Reports to UNCCD, UNFCCC

Indicator	Purpose	Importance	Links to national/regional/international initiatives and strategies	Availability?
total land area and % of arable land used	forest cover and rate of deforestation.		and UNCBD.	and UNCBD
Volume and value of trade (imports, exports and re exports) of agricultural and forestry products	LRD has several programmes and projects which work to increase exports of agricultural and forestry commodities. These data captures trends in performance of export commodities and trends in reliance on imports.	Without trade data impossible to monitor performance of programmes contributing to increased trade Essential for measuring food security	Pacific Plan Objective 1	Regional trade stats database being set up by LRD but will continue to have gaps for some countries. Use of partner data for countries that trade almost exclusively with one other country.
Prices of domestic and international agriculture and forestry commodities	Prices provide an indication of affordability (imports) or returns (exports). Tracking price movements and in particular large fluctuations which might impact earnings from exports, cost of imports, food security.	Its absence makes it difficult to provide analysis of how movements in prices impact PICTs and food security	Pacific plan priorities	Several countries undertake regular market surveys Consumer councils monitor retail prices (aware of Fiji – more?) International prices available from other agencies
Rate of deforestation	Amount of forest resources cleared / degraded each year	Focus on sustainable forest management and need to monitor impact Necessary for accessing carbon financing for forestry conservation	MDG (7) Pacific Plan 5.19	UNTT FAO Forest Resource Assessment May need satellite imagery which is very expensive
Rate of land degradation (e.g. soil erosion)	Extent of soil nutrients and biomass that are lost each year	We organise capacity building in sustainable land management and can qualitatively monitor success by looking for lower level indicators within target communities (e.g. encroachment of agriculture activities to forest areas, planting on sloping land, planting vetiver grasses on sloping land)	MDG 7 (Environment) UNCCD UNFCCC (carbon emission from land use change)	Reports to UNCCD, UNFCCC Dutch funded project for a few countries Very difficult to measure without comprehensive data on soils, forest cover and ecosystem models
Desirable				
Rate of biodiversity loss	Number of species (crops, trees, animals) being lost each year	Our activities on genetic resource conservation and invasive species contribute to safeguarding	Convention on Biological Diversity PP 5	Reports to CBD NGOs working in this area collect data on biodiversity

Indicator	Purpose	Importance	Links to national/regional/international initiatives and strategies	Availability?
		biodiversity but detailed information on biodiversity present in different countries inherently difficult to obtain as not all diversity has been recorded yet so impossible to measure rates of loss		In conjunction with SPREP some monitoring of invasive species
Numbers of people suffering from diet-related diseases (diabetes, obesity, heart disease) (and if possible cost of treating them)	LRD attempting to boost link of agriculture and health. This is important information in making the case that this is vital to spend money on addressing improved nutritional practices	Useful for making the case that additional resource are directed to targeting health training for extension officers.		PHD?
Contribution of locally grown foods to diets	FAO Food Balance Sheets methodology preferred. This requires agricultural production data plus trade data and nutritional conversion factors. Alternatively it requires information on diets. It is possible to derive this information from HIES but the result is a % of expenditure spent on imports rather than an absolute measure e.g. in terms of calories	We know from observing diets that there has been a trend away from consuming traditional staples but beyond some estimates derived from HIES we have no objective evidence on which to prioritise activities to promote increased consumption of local produce.		FAO has capacity building resources available to collect the data needed. Trade data, production data Some countries have nutritional surveys (e.g. Fiji).
Diversity of diets	LRD programmes need to link the health agenda to agriculture and forestry. A key strategy is encouraging the production of local, diverse food but we do not currently measure progress on this.	Relates to specific objectives in our strategic plan. Wouldn't be able to report back in its absence.		Information available in HIES but too infrequently May have to rely on focus surveys with target communities.
Level of remittances	Value of income support flowing to households from overseas	Important contributor to food security in some countries. If this information is missing a distorted picture can be presented	Pacific Plan priorities	National accounts World Bank

Indicator	*Purpose*	*Importance*	*Links to national/regional/international initiatives and strategies*	*Availability?*
Proportion of budget allocation for agriculture and forestry disaggregated by extension services, research, information dissemination etc	*To demonstrate the commitment at government level to these sectors. Leaders talk of highlighting food security but does that translate into additional funds.*	*Expenditure on agriculture research and extension are vital inputs to the capacities of these ministries to develop these sectors.*		*National budgets Agriculture and forestry ministry budgets*