

Collection and use of domestic market data in evidence-based policy making

Lessons from Five Pacific Island Country
Domestic Market Case Studies



All  Agricultural Commodities Programme



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Synthesis report prepared by

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PREFACE

Poor supply of agricultural data coupled with weak capacity for analysis and limited demand for its use in political decision making have combined to undermine sustainable improvements in agriculture data systems in the Pacific region. Recognizing that data quality and the system as a whole is driven by demand and that demand will be driven by the awareness of its value by decision makers, it is vitally important to demonstrate the value of improved collection and use of data to policy makers. These were key findings from a recent FAO agriculture data scoping study in the Pacific region and a subsequent expert consultation meeting on enhancing evidence-based decision making held in Nadi, Fiji in October 2010.

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. It is clear that a country's 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.

This study has adopted an empirical approach using case study research to gather evidence to better inform policy processes and to help raise awareness of the potential for use of more evidence based policy.

The synthesis report and the associated case studies should be of interest to those responsible for developing agriculture policy, particularly staff in agriculture policy and planning divisions and those providing statistical services in the region. It should also be of interest to development partners seeking to target investments to promote sustainable agriculture development in the region.

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INTRODUCTION

Agriculture is of importance in most Pacific Island Countries for economic development (food production/domestic sales, exports and downstream processing), for subsistence food production and for social cohesion and resilience. Recently there also appears to be some increased interest amongst development partners to support the sector. Therefore being able to make informed decisions about how to facilitate sector development and how to monitor interventions would seem to be a high priority. But despite the importance of the agriculture sector serious weaknesses in agricultural statistics still persist.

Accessing reliable data on agriculture production, marketing and trade presents a major challenge in developing and monitoring appropriate policy interventions in most countries in the region. 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.

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).

Despite that the capacity to compile and analyse data to provide policy relevant information to guide decision making is often lacking in the relevant national institutions, the focus of capacity building effort in the region 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 (FAO, 2010).

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 (Rogers, 2010). Without appropriate analysis of agricultural statistics the value of them to the policy process is undermined. 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.



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In order to move things forward, a higher priority needs to be given to demonstrating the value (\$) of agriculture data for decision makers. 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, regular monitoring of domestic market activity might provide a useful proxy to assess impact of external factors (such as food price hikes, agriculture labour migration, increased tourist arrivals etc.) 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 then 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) commissioned a series of case studies in which domestic market data was collected and used to analyse contemporary policy issues.

The case studies which have been carried out in Fiji, Kiribati, Samoa, Tonga and Vanuatu sought to address specific policy questions by collecting and analysing data from domestic agricultural markets. The overall aim of this work is 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.

To draw out the key insights from the set of case studies, this synthesis paper first briefly discusses the importance of evidence based policy making, stressing that different types of evidence may be required at different stages in the policy cycle. The five case studies are then reviewed to highlight the range of policy issues addressed through the collection and use of domestic market data, the stages of the policy cycle focused upon, the approaches taken to data collection and analysis and the main policy conclusions. The synthesis report concludes by reflecting on the policy value of domestic market data and the approach to its use in informing improved policy decision making in the Pacific region.

EVIDENCE-BASED POLICY MAKING - WHAT IS IT AND WHY DO WE NEED IT?

The use of information in arguing for policy change, in formulating policy interventions and in monitoring their effectiveness is not new. However, the way in which the information is used, as well as the accuracy and comprehensiveness of that information can significantly affect the decisions made and hence the outcome of policy processes.

The way in which available information is used is critical for a number of reasons. As policy development is generally subject to competing vested interests, there is a tendency for those with better access to information to use, or misuse, it in support of their own position. The use of information can also be driven by pressure to act quickly – often decision makers “need” answers at short notice, precluding the possibility of appropriate information being assembled as evidence to guide decisions. To counteract such pressures, having ready access to a robust data-based and the capacity to analyze it is important.

The emphasis on the improved use of more accurate and comprehensive evidence in decision making has also increased as a result of the high risk of failure when policy interventions are not based on evidence. For example, a number of government initiatives in the region to support the increased production of products for export in response to new international market opportunities have resulted in minimal impact in terms of increased export revenues as these opportunities have often only been sustained for a few seasons, but significant negative impacts in terms of depressed producer prices when the export opportunities disappear and the domestic market is unable to absorb the increased volume of production – the type of scenario that could have been considered in the formulation and analysis of these interventions.

There is also increasing appreciation that policy is set in a dynamic context and that there is a need to better understand the policy environment and how this is changing both in the short term (for example, increased price volatility) and in the longer term (for example as a result of the impacts of climate change on patterns of production and trade). Finally, as political processes develop, particularly in an era of limited fiscal resources, there is also increasing emphasis on transparency in decision making and the need to communicate policy ideas and their potential impacts more effectively with different constituencies to ensure their buy-in.

Recently, a set of generically termed “Evidence-based approaches” have been developed which provide guidance and advice on the kind of evidence that is

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relevant to addressing specific policy issues, how it is to be treated and how decisions are to be made using the evidence in question (LaCaze and Colyvan, 2009).

Whilst these approaches seek to promote a shift from opinion based to evidence based decision making, they also recognize that evidence is not the only factor that influences policy (by definition, policy making is a political process) (Sutcliffe and Court, 2006) and importantly, that policy making is not just about policy analysis. The implication of the last point is that decision making needs to be informed by evidence at different stages of policy cycle. The questions to be addressed and the associated data needs can be quite different at each stage. There are many alternative descriptions of the policy cycle, but essentially, it comprises four key inter-related stages: Agenda setting; Policy formulation and choice; Policy design and implementation; and Policy evaluation.

- Policy processes (whether modification of an existing policy, significant policy reform or the introduction of a new set of interventions) are generally set in motion as a result of perceptions that the status quo is failing to achieve a societal objective. At this agenda setting stage, evidence is required to assist in identifying the source of the failure and in quantifying the magnitude of the resulting implications relative to other issues requiring decision makers' attention. Essentially, evidence can help in the identification of the policy issue and in demonstrating its importance.
- Once a policy issue has been prioritized, evidence is often required to inform the formulation of alternative policy approaches and the choice between these alternatives. Evidence based frameworks for choosing between alternative options vary in their demand for evidence. Cost benefit frameworks are generally data intensive, requiring the quantification and attribution of both the potential beneficial and negative impacts of the intervention and of the costs of policy intervention; cost effectiveness frameworks, by contrast, focus more narrowly on comparing the costs of achieving a set objective.
- Policy design and implementation may require a quite different set of information. For example, a key question facing policy makers is who should deliver a service required as part of a particular policy intervention? There has been growing interest in the concept of Public-Private Partnerships, one variant of which provides for public sector funding and private sector delivery. In designing an effective

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partnership, policy makers need to be cognizant of the fact that the private sector will normally (unless acting altruistically) enter the partnership to further their own objectives. They will look at the opportunity cost of their investment of time and resources and could attempt to maximize their profit through increased efficiency and/or expanded service coverage, a strategy that would contribute to the success of the PPP, but equally, could use the PPP to increase their margins, reduce the quality of their service and/or to displace competitors. In ensuring that a beneficial outcome is achieved, evidence is needed to help determine how to choose private sector operators (records of past performance, efficiency indicators etc), to design effective systems of reward and sanctions, and to ensure effective monitoring.

- A final component of the policy cycle is policy evaluation. No matter how good the evidence available during the previous components of the cycle, all policy is experimental and as such, evidence is required to allow both the impact of the intervention to be assessed and to learn lessons as to how the process of policy formulation, design and implementation can be improved.

The brief discussion of the use of evidence at different stages in the policy cycle reveals that efforts aimed at increasing the use of evidence in policy making can be resource intensive. For these efforts to succeed there must therefore be an effective demand for evidence based policy making. Demand is likely to be greater if policy makers are receptive to the use of evidence, if they understand the value of improved evidence, see it as a necessity and give adequate time to its collation and use during the policy process. They would also need to understand the incremental benefits of investing in more robust collection and use over and above what is currently available. This requires recognition that existing evidence is unlikely to be sufficient; that it may exist but can be of uncertain quality, especially where there is no scope for triangulation; that it may not be valid or relevant – the use of analyses of similar issues in different countries may not be relevant in a different country context; that in using existing data, statisticians often need to ‘translate’ statistics into a form that is useful to users, and that needs to be done without distorting or misrepresenting data (Segone, 2008), a task that is not easy if the data available is inaccurate or partial.

It is against this background that the policy value of the case studies and of improved evidence based policy making more broadly is now assessed.

REVIEW OF THE STUDIES

To facilitate the review of the case studies, Table 1 provides some key information on the five cases chosen for the study. The review then considers each component (column) in greater detail.

Table 1; Selected Case Studies

	Key Policy Issue(s)	Stage in Policy Process	Current Status of Market Data	Study Approach Data Sources
Fiji	<p>I. <i>Opportunity for substitution of imported cereals with domestic staple root crops</i></p> <p>II. <i>What is needed to increase use of local produce by hospitality industry?</i></p>	Formulation and design and agenda setting	Historical records and regular domestic market data collection? Range of specific market activity and functionality studies available. Food balance sheets regularly constructed and published	Review and analysis of existing data and studies to draw appropriate policy lessons and recommendations
Kiribati	I. <i>Impact of the Import Levy freight subsidy on trade in horticultural products on South Tarawa domestic markets</i>	Evaluation and design	No historical market data; no current regular collection; no available market studies; no agricultural census; some administrative data on freight subsidy	Survey of all fresh produce market outlets in S Tarawa every day for six days. Interviews with key recipients of subsidy. Review of admin data.
Samoa	<p>I. <i>Are current market data collected weekly at the central market sufficiently representative to inform policy?</i></p> <p>II. <i>Have domestic markets capacity to absorb increased production?</i></p>	Agenda setting	Historical records and regular collection of market data from central municipal market every Friday. Data collected includes price, volume and number of sellers for key vegetables and root crops	Mapping the market structure: categories of production and distribution channels. Data on price and volume collected from 4 representative outlets each Friday over a 4 month period
Tonga	<p>I. <i>Impact of seasonal labour mobility schemes on domestic production and marketing</i></p> <p>II. <i>Opportunity for and value of off-season vegetable production</i></p>	Formulation and agenda setting	Good data on market prices and volumes sampled at central market and roadside markets in Tongatapu and central market in Vava'u* Limited analysis of current data set	Analysis of existing data and identification of gaps. Survey of producers and sellers and review of administrative data.
Vanuatu	I. <i>Will significant increase in tourist arrivals impact on domestic fresh produce markets?</i>	Agenda setting	No regular market activity data collected limited historical data and few market studies.	Estimation of total supply to Port Vila market – survey of sample vendors (municipal and roadside markets) on one Friday. Estimation of demand from hospitality sector – survey of weekly purchase from sample of hotels, restaurants, kava bars, institutional canteens

* Historical records for central market data going back several years, but roadside data only collected since 3rd quarter 2009 and Vava'u market only sampled for 6 months from September 2009 to March 2010.

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Amongst the five countries featured for the case studies two countries, Kiribati and Vanuatu currently have no institutionalised market data collection systems in place whereas the other three countries, Fiji, Samoa and Tonga, do collect market data on central municipal markets on a regular basis. However how this data is analysed and used to inform policy is less certain.

With the exception of Fiji¹ all countries in the study are net food importers and have seen food imports rise over recent years. Escalating global food and fuel prices challenge balance of payments for all of the countries which run significant trade balance deficits. High global food prices have spurred imported inflationary pressures with year-on-year inflation reaching double digits in some of the countries in 2008/09.

In four of the countries, Fiji, Vanuatu, Samoa and to a lesser degree Tonga, tourism is a significant productive sector in the economy and an important source of foreign exchange. Growing numbers of tourist visitor arrivals constitute a substantial potential market for domestic food production if supply channels can meet market demand in terms of consistency in quantity and quality required.

Limited employment opportunities, particularly in rural areas, compel the countries generally to look for opportunities to secure temporary employment in the bigger economies of Australia and New Zealand. All Pacific Forum countries (other than Fiji whose participation was suspended) are eligible for seasonal agricultural employment under the New Zealand Recognised Seasonal Employer (RSE) scheme, but Kiribati, Samoa, Tonga, and Vanuatu were selected for special “kick-start” status which entailed deliberate and expedited efforts to launch the scheme and recruit in these countries. Whilst temporary overseas employment offers many economic and social benefits the absence of a significant pool of agriculture labour at critical periods in crop cycles may have the potential to depress domestic food production and market supply.

The paragraphs above have highlighted three external factors; (i) high and volatile global commodity prices, (ii) increased tourist arrivals and (iii) temporary absences of agricultural labour, that could impinge on government policy on local agricultural production and where policy impacts may be discerned in domestic market activity. The following sections review in greater

¹ Fiji food exports are still largely dominated by sugar.

detail factors that are of importance to the policy relevance and value of the five case studies selected.

KEY POLICY ISSUES

The **Fiji** study investigates the policy area of import substitution by examining the range of quantitative and qualitative data surrounding two related issues.

- *With the sugar industry in decline, the Fiji Government is exploring a dual track policy of encouraging exports of other agricultural products, while facilitating greater import substitution. Exports of fresh produce to neighbouring countries are complicated by quarantine barriers, relatively high transport costs and competition from lower-cost producers in Asia, whilst the local tourist hospitality industry, with 600,000 tourist arrivals in 2010, presents albeit on a temporary basis, a domestic market worth exploring in greater detail.*
- *Increased dependence on imported cereals, with implications both for health and national food security, has led some policy makers to promote increased consumption of traditional root crops to substitute for imported products like rice. However, the factors driving changing consumption habits first need to be fully recognised and addressed.*

Kiribati is a small atoll island country that relies heavily on imported foods and has a high density urban population resident in the capital island of South Tarawa. In 2004, for the first time, the country experienced real food shortage, in terms of imported starchy foods such as rice and flour when the Kiribati Chief container vessel missed the scheduled delivery of supplies from Australia to Kiribati and consequently the urban population in Tarawa went without rice and flour for more than a month. In 2008, the global hike in prices of rice and flour also hit the people of Kiribati hard. Because of the nation's vulnerable food security situation, government policy has been directed to increasing domestic food production particularly on some of the more fertile outer islands such as Butaritari and through provision of subsidy to facilitate transport of produce to help feed the urban population in South Tarawa. This study therefore investigates one priority policy issue:

- *The impact of the Import Levy freight subsidy on trade in horticultural products on South Tarawa domestic markets.*

Samoa, with support of the EU funded AAACP, has recently formulated and adopted a comprehensive sector strategy for fruit and vegetables which emphasizes revitalising the sector through a value-chain approach. The strategy has been designed based on current and future market potential and envisages

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a significant increase in local fruit and vegetable production to be traded both on domestic and export markets. But development and prioritisation of implementable activities under the Fruit and Vegetables Sector Strategy is complicated by the lack of basic domestic market data. In the absence of such data, a value chain study commissioned by FAO to assist in the prioritisation relied on the conceptualisation of a generic value chain and, on the basis of a set of assumptions, attempted to determine key bottlenecks to value chain development as a contribution to how to sequentially alleviate these constraints (Tamasese, 2009).

For selected vegetable products (head cabbage and tomatoes) Tamasese's study suggested significant potential returns to investment in increased supply to domestic markets. However, the results of the analysis were highly sensitive to the assumptions made regarding price received by producers. Therefore a key objective of the current case study was to contribute to an improved understanding of the process of price formation in the domestic market for the selected vegetables, and to assess the capacity of the domestic market to absorb an increase in the production of these vegetables, with particular attention to the price effects of increased supply. The study therefore addressed two policy related questions:

- *Are market data collection methods reflective of the current market structure and functionality?*
- *Will domestic markets have the capacity to absorb increased production foreseen under the Fruit and Vegetable Sector Strategy and how would this impact prices?*

The **Tonga** case study focuses on providing a better understanding of how the fresh produce markets are currently functioning and their evolution over the past few years and then uses this information to inform two policy areas:

- *The possible implications of the seasonal labour mobility schemes in terms of decreased local agricultural production and supply through domestic market channels.*
- *Promotion of off-season crop production to help stabilize market prices and raise total farm output and incomes.*

The fresh produce markets in Port Vila, **Vanuatu** are thought to be under increasing demand-side pressure as a result of rapid urbanisation with the local population becoming more reliant on these markets for food and also from the potential demand from growing numbers of tourism visitors. But lack of information and understanding of the structure and functionality of the

domestic fresh produce markets has constrained capacity to develop appropriate policy interventions.

The tourism industry is a vital sector for the Vanuatu economy contributing around 20% of GDP and is a major source of employment and foreign exchange. A government tourism policy target is to increase total tourist annual visitors to reach 300,000 by 2015 (Government of Vanuatu, 2009). This means an almost doubling of current arrivals, excluding cruise ship passengers². The focus of this study therefore is to elaborate on the potential impacts (positive and/or negative) of increased tourist numbers on the Port Vila markets and the different stakeholders engaging in those markets. This involved mapping the supply and demand channels for the food service sector in Port Vila in order to shed light on this key government tourism policy to establish:

- *The potential impact of increasing tourist arrivals on domestic fresh produce markets.*

STAGE IN THE POLICY PROCESS

The agenda setting phase of the policy cycle features heavily across the case studies in comparison to the other phases of formulation, design, implementation and evaluation. Perhaps this reflects the current situation in the case study countries where there is generally limited existing data (evidence) on the structure and functionality of domestic markets (refer to section below on status of market data).

A focus, particularly in the Samoa and Vanuatu studies was on the collection of domestic market data and its use to demonstrate how existing market structures could be affected by (i) an increase in the supply of produce to the market (Samoa) and (ii) an increase in the demand for fresh produce from the market (Vanuatu). These case studies give less attention to the types of interventions or policies that might be put in place to ensure that the implications of an increase in supply and/or demand are beneficial to different groups of market participants.

By contrast, having highlighted the potential opportunity for import substitution, the Fijian study looks more specifically at the interventions and support that might be needed to take advantage of these opportunities, hence emphasizing the role of policy formulation and design and the possibilities for informing these stages through the use of existing evidence.

² *Although cruise ship arrivals currently exceed other visitor arrivals this group usually stay for less than a day and are not considered likely to consume much local food during their stay.*

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The study in Tonga addresses two different policy issues. In assessing the impact of the seasonal labour scheme, an attempt is made to provide evidence that could assist in the formulation and implementation of the scheme with a view of ensuring that the positive effects for communities are not offset by detrimental implications for local agricultural production due to a scarcity of labour. In considering the opportunities for off-season production, the study both describes the magnitude and importance of the issue (agenda setting) and goes some way to informing the formulation of potential policy interventions, through for example, prioritizing the key products.

In Kiribati, although there is no existing market data, secondary information on the use of the freight subsidy exists, and the case study collects and uses primary market data in an attempt to evaluate how effective the subsidy is. Insights from this evaluation can then be used to inform the (re)design of the existing intervention to improve performance.

CURRENT STATUS OF MARKET DATA

In Fiji, a regular weekly survey of 8 municipal fruit and vegetable markets on the two main islands of Viti Levu and Vanua Levu, has been conducted by the Ministry of Primary Industries since 1999. Ministry extension officials collect unit price data on more than 30 fruit and vegetable products and transmit these back to the AgTrade group within the Ministry. This information is then entered into the Ministry database and is shared with the Information and Communication Division for dissemination in the form of a printed Market Weekly newsletter, and in newspapers and on radio. Copies of Market Weekly can be downloaded from the Ministry's [website](#). The Ministry are currently in discussion to disseminate price and other market information via mobile phone SMS, in an effort to reach a wider audience.

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 (the 'Fugalei Market Survey Report'). Since 2008 the Samoa Bureau of Statistics (SBS) 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.

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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 in 2007 and found it to be very small in proportion to the central Fugalei market and thus did not at this time consider it worthwhile to extend the survey. However, more trading now appears to be occurring at the satellite markets and the SBS is currently in the process of performing a trial weekly survey at Salelologa market in Savaii to determine how comparative the volumes and pricing are with Fugalei market.

Tonga has done a commendable job of collecting basic data (volumes and prices) of traded agricultural commodities on the domestic market. 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. The Unit produces a quarterly market report – the “Domestic Market Survey Report”. Initially, this report only sampled the central Talamahu Market, but in 2009 the survey report was extended to include data on roadside markets in Tongatapu and the Utukalongalu Market in Neiafu, Vava’u. There have also been aspirations to extend this survey further to include the Ha’apai market. Unfortunately, however, budget constraints in 2011 have instead seen a cut back in the scope of data collection with the removal of the Utukalongalu Market from the regular market survey.

In contrast, there is almost a complete absence of market data in Kiribati and Vanuatu. 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. The Department of Agriculture in Kiribati has relatively limited capacity and resources to collect agriculture data and there is currently no market survey or price and volume data collected to assess trade on domestic markets.

The Vanuatu National Statistics Office (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 also

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uncertain if any annual agriculture surveys will be implemented and thus information in the census will soon become dated.

A system for a quarterly market survey has been prepared that is designed to collect quantity of produce (crops, fruits, vegetables, firewood, and livestock) brought to market, quantity sold and prices, but this has not to date been implemented because of insufficient resources. The VNSO recognise 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 (Rogers, 2010).

Whilst Fiji, Samoa and Tonga all have dedicated policy/planning capacity in the Agriculture Ministry there still remains relatively limited activity in data analysis and dissemination of information useful for decision makers. Thus in these countries which lack appropriate analysis of the agricultural statistics the value of them to the policy process is undermined. Whereas in Kiribati and Vanuatu the absence of market data and the lack of appropriate capacity and skills within the sector ministries have precluded the opportunity to use data to better inform policy.

STUDY APPROACH AND DATA SOURCES

All of the studies have to a greater or lesser extent drawn on secondary sources of information to enrich their analysis. But the Fiji study in particular has relied entirely on an available body of domestic market data and related sector studies and reports such as the Food Balance Sheet to elucidate policy insights. In Kiribati primary data was collected on all 15 fresh produce market outlets in South Tarawa for six consecutive days in one week and the study author also utilised interviews with key informants in government offices and market traders including all traders (5 in total) who have been recipients of the freight subsidy in 2010. This information was supplemented with administrative data on disbursements of the freight subsidy from the Ministry of Finance and some limited agricultural activity data drawn from the 2005 Population Census report.

The Samoa study utilises the central municipal market (Fugalei) data set that is regularly collected (every Friday) by the Samoa Bureau of Statistics and compares this with data on price and volume collected at four satellite market outlets (representing different producer/trader categories) on each Friday over a four month period (March to June, 2011). The study author also draws on his own extensive experience as a producer and trader of vegetables on the Samoa market together with other key informant interviews to elaborate the market structure for fresh produce: categories of production and distribution channels.

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Like Samoa, Tonga is fortunate in having a substantial municipal market data set available which spans several years; this information together with some recent (but more limited in span) data collected on satellite roadside markets in Tongatapu (the capital island) and on the municipal market in the outer island of Vava'u, formed the main basis for the analysis in this study. This data set together with information supplied by key informants is used by the author to map the main fresh produce supply and demand channels in Tongatapu. The existing market data set is also analysed to draw insights on the two policy issues under review.

The dearth of domestic market data in Vanuatu when the study commenced required the author to rely heavily on primary data collected during the course of the study for the analysis. The author attempts to make estimations of both the fresh produce supply to the Port Vila market and the demand from the hospitality sector as a basis to draw policy insights. The investigation involved a representative sample survey of vendors at the central municipal market and also at the recently established roadside markets on the new Efate Ring Road to establish local supply and then supplemented this with administrative data on fresh produce imports supplied by the VNSO. The municipal and roadside market surveys were conducted on separate Fridays in the month of May. To establish demand from the hospitality sector, a survey of weekly purchase from a sample of hotels, restaurants, kava bars, and institutional canteens was undertaken during one week in May. The survey work in Vanuatu was supported by the VNSO and used pre-trained enumerators and pre-tested survey forms.

INSIGHTS FOR POLICY

Utilising an existing body of information available, the case study in **Fiji** sets out to draw insights for policy makers looking to reduce the dependence on imported food products both for domestic consumption, and to supply a substantial tourist sector demand. The study highlights that although available volumes of local produce supply and good price competitiveness with imported produce already exist in the Fiji market place, this alone may not be sufficient to promote substitution of imports with local produce. Indeed, a review of the demand requirements of the hospitality sector and supermarkets implies that quality and consistency of supply are attributes which are critically important to these consumers, whereas substitution of cereal imports by local staples such as root and tuber crops would need to address consumer demands for greater ease of preparation and good value for money.

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The study concludes that whilst statistics can tell us a lot, they need to be complemented by qualitative information from various sources in order to get a composite picture which is necessary to develop effective evidence-based policy.

The **Kiribati** study, in addition to providing a snapshot of the domestic market activity in a country where such data has not previously been collected, provides interesting insights into the implementation and effectiveness of the freight subsidy and the basis for making a number of recommendations as to how it could be reformed in order to better contribute to a more secure food supply on South Tarawa.

The freight subsidy is established from the Import Levy (Special Fund) under the Laws of the Gilbert Islands (1977). The arrangement in collecting this fund is through the imposition of the Import Levy upon all goods imported into the country by ship. The purpose of the Special Fund is twofold; (i) to meet sea freight costs of imported goods when transported and distributed to the outer islands and (ii) to meet sea and air freight costs of commercial foodstuffs and handicrafts from outer islands to Tarawa and freight costs of the same items when transported between the islands or to Tarawa. The reasons for financing these two areas are: (a) to stabilise the price of imported goods when sold in the remote islands of Kiribati and (b) to encourage people in the outer islands to engage in commercial activities such as selling of foodstuffs (food crops) and handicrafts to the markets in Tarawa.

However, the study analysis revealed that the freight subsidy policy which is meant to boost economic activity in the outer islands and food production to supply the needs of the urban centre currently appears substantially ineffective. Because the subsidy covers limited prescribed produce items and there are only a handful of traders benefiting from it, the overall impacts of the policy is minimal as the majority of the local produce operators and consumers in South Tarawa, Betio and in the outer islands are not helped.

Whilst the freight subsidy fund is well administered with adequate preventative measures to avoid malpractice and wrong payments, it appears not to be effectively targeting freight supplies from the outer islands to Tarawa. In 2010 only 5 traders made use of this subsidy, and only \$13,266 (9%) was dispersed out of a total allocation of \$150,000. The balance of funds were in fact utilised to subsidise the transport of imported goods to the outer islands!

Food security is the major issue in South Tarawa especially with the frequent shortages and high prices of rice and flour. The policy therefore needs to

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embrace all factors that will foster both food production and the commercial returns of operators in the supply chain. The freight subsidy is intended to increase flows of fresh produce produced on the garden islands into the urban markets in South Tarawa, thereby increasing food availability and access to urban consumers and the improved returns to producers in the outer islands.

There are four areas identified in this study as ways forward to boost food access and availability in urban Tarawa and returns to farmers in the outer islands. Firstly, there is a need to increase awareness on the Freight Subsidy mainly to people in the outer islands and to produce traders in South Tarawa, who always act as middlemen. The lack of awareness and understanding on the subsidy has led to the under-utilization of the Fund by all operators. Secondly, the system surrounding the collection of freight claims needs to be made simpler and more user-friendly to operators. Thirdly, to avoid shortfalls in the fund, the annual freight subsidy allocation needs to be substantially increased and restricted to subsidising freight of local produce from the outer islands and should not be used to supplement the allocation for freight of imported commercial foods to the outer islands.

Finally, it is necessary to review the current Freight Levy Act and the range of crops eligible for the subsidy. The food items currently prescribed for in the Act are banana and pumpkins and this is not a sufficiently wide range of produce to overcome food security problems in Tarawa. In order to strengthen food security and encourage creation of extra cash earning amongst the people of Kiribati, the study recommends that the subsidy policy is broadened so it can also cater for a wider range of food items.

In **Samoa** an assessment has been made of the market structure in regards to the Fruit and Vegetable sector in particular. The main areas of assessment were the types of participants involved in the market, the methodologies and practical data collection models used to measure market performance, as well as the likely impacts on the market should increases in production occur. This was with the overall intention of indicating how effective the current domestic market data collection system is in Samoa and the accuracy of the current data set for use in informing policy design, implementation and monitoring.

A key finding of the study suggests that expanded data collection beyond the current scope of a single market centre (the Fugalei Market) is necessary to ensure accurate data is collected on the markets, particularly if this data is to be used effectively in policy formation. For instance, during the June data collection period, in total more tomatoes were traded through the three alternative

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outlets surveyed than through the central Fugalei market. As the surveyed alternative outlets only form approximately 30% of total outlets that trade vegetables this suggests that using Fugalei market data to assess the availability would give a serious underestimate. This also applies to head cabbage, although to a lesser degree.

Considering the volumes that are moving through the alternative markets compared to the Fugalei market it is clear that the Fugalei market may only be capturing approximately half of the total volumes traded. Therefore Fugalei market data alone cannot be used as an indicator of market functionality as a whole, but may be useful as an indicator of market saturation point. The author of the study further recommended that an auditing framework is put in place to monitor the efficacy of data collection and to ensure maintenance of data collection standards.

Finally, the author of the study surmises that should farmers in Samoa with support from the Fruit and Vegetable Sector Strategy manage to increase production, current indicators show that there is a requirement for improved distribution logistics into the broader market to enable efficient market distribution so as to reduce the risk of certain market channels becoming over supplied with resultant significant falls in producer prices. Of particular note in this regard is the growing number of roadside stalls in Samoa.

Although **Tonga** has maintained over recent years a relatively strong and extensive market data collection system relative to other countries in the region, plus this data has been made available in the quarterly Domestic Market Reports, limited opportunity has been taken to analyze the data in order to better inform policy decisions. Therefore, despite the high costs involved in collecting this data its true value has not yet been fully realised through improved policy decisions. This study therefore helps provide a clearer understanding of the structure and functionality of domestic markets including trade flows and prices, and evolution of the domestic market for the past few years to help shed light on the possible impact of some specific government policies such as the Recognized Seasonal Employer (RSE) scheme and the MAFFF promotion of off-season crop production to help stabilize market prices and raise total farm output and incomes.

Whilst no apparent impact of the RSE could be detected from the total supply of fresh produce to the Talamahu Market, the analysis was somewhat confounded by the negative impacts on supply experienced following the civil disturbance in November 2006 which disrupted trade in central Nukualofa. Therefore the

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author of the study recommended that a continued effort is made to monitor any possible impact on domestic production if the labour mobility programs involve increasing numbers of agricultural labourers. Furthermore, specific surveys will need to be designed to focus data collection on districts from which the maximum numbers in the RSE program are drawn.

By contrast, the review of domestic market data on seasonality and prices reveals important policy insights. Significant within-year fluctuations in the prices of a number of vegetable products are detected and this data can be used to provide an indication of the potential returns to extending the production seasons of individual crop types. Considering the potential benefits in terms of improved farm incomes, more stable consumer prices, increased contribution of the agriculture sector to the economy and enhanced food security it is strongly recommended that the promotion of off-season crops is accorded high priority and appropriate research and extension capacity and resources are directed to achieving this policy goal.

The Tonga study analysis demonstrates that the existing domestic market data set already provides a strong basis for making improvements in the process of policy formation by providing evidence that can be used to better inform policy decisions. But it also highlights that additional data will often be needed to supplement the data in the domestic market survey to fully address specific policy issues.

The **Vanuatu** study was undertaken with the express aim to demonstrate the value of using domestic market data to better inform policy formation. At the time that the study commenced there was a near complete absence of data on the fresh produce domestic market in Vanuatu. The government authorities currently do not implement any regular market surveys and there are few studies which are easily accessible for use by decision makers. This poses a serious limitation for evidence-based policy making. It also constrains the analysis and interpretation that can be achieved from a case study approach because there is no context and baseline data to assess and validate assumptions being made.

Acknowledging the data limitations, the Vanuatu study has gone some way to map the supply and demand channels for the food service sector in Port Vila and determine the potential impact of increased tourist arrivals. The most plausible estimation is that the hospitality sector (hotels and restaurants) currently constitute only a small proportion (estimated 2.5%) of total market demand for fresh produce and therefore even a doubling of tourist numbers

would not overall have a significant impact on supply channels. However, the food service sector as a whole consuming around 750 tonnes of fresh produce annually is an important market for local produce. Interestingly, kava bars are the market segment estimated to have the largest share of demand (35%) with institutional canteens and restaurants both having a 23% share and hotels only 19% share.

Whilst the study has provided a preliminary snap-shot of the fresh produce market supply and demand, particularly for the food service sector, there are a number of data collection areas that need to be more rigorously addressed and the report includes recommendations on where further survey and data collection should be undertaken and strengthened.

CONCLUSIONS

Each study, whether developed on the basis of primary data collection or on existing data, has demonstrated that even limited additional resources to produce good evidence can add significant value to policy making processes. In a working group meeting organized to review and finalize the case study reports participants were challenged to identify key criteria to assess policy value of such analyses. The two most important criteria for judging policy value were deemed to be the priority of the policy issue under investigation and the main target group for the study findings. Clearly the higher priority the issue under investigation is on a country's development agenda the more value will likely be gained by being able to make better informed policy choices. Similarly, the more influential either through political standing or breadth of constituency, is the target group for the study findings the more likely recommendations accruing from the studies will be acted on.

The findings from the five case studies and this synthesis report reemphasize the need to direct more efforts toward ensuring better analysis and use of existing data as well as maintaining the integrity of the current collection systems and extending them as deemed necessary. Furthermore, given the general lack of capacity in the region to analyze and disseminate policy relevant information this implies also a need for an increased focus on capacity building in this area.

In the Pacific Islands region, growth in agriculture can be expected to have a significant impact on a larger section of the population than any other sector. Likewise, policies affecting the performance of agriculture have important implications for the economy as a whole. Globalization has made the sector

increasingly sensitive to trade-related issues and a move from subsistence production to an increasing production for markets means that agriculture is increasingly linked with other sectors of the economy. Trade liberalization initiatives imply future demand and supply shifts and dynamic adjustments in markets that will have far-reaching and unpredictable effects on food trade. In this context the need for good agricultural data in general, and domestic market data in particular, to enhance effective evidence-based decision making has never been greater.

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