

Local Learnings from Local Voices

Exploring rural ni-Vanuatu perspectives of agricultural
education and extension services in Santo, Vanuatu



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Abstract

Over the past 100 years, Vanuatu has seen the growth of a commercial agricultural sector through the influence of colonial interests. However, around 80 percent of the population still rely on semi-subsistence agriculture for their daily well-being. Agricultural education and extension resources operate across Vanuatu but are centralised around the Santo, the largest of Vanuatu's 83 islands. However, their use by rural villages is limited despite growing recognition within rural communities that agricultural practices need to evolve in order to address issues such as climate change and food security. This led me to ask the questions: what are the ways in which villagers engage with these agricultural development resources; what influences whether they use these resources or not; and what would help improve engagement between villagers and resources?

To answer these questions, I undertook this research using an indigenous Pacific research methodology which aligns the data collection approach and process with traditional practices of knowledge sharing and relationship building such as storytelling and open group discussions. This included living in three different villages, building relationship, conversing in Bislama, and conducting semi-structured group discussions in the traditional ni-Vanuatu format of storian.

This research found an apparent disconnect between the rural village context and agricultural education and extension services on Santo. All three villages had minimal engagement with these resources, more regularly receiving agricultural information through other villagers. From the villagers' perspective, in-village engagement is the most desirable and effective form of engagement. Perceptions of the present situation were dominantly negative with high travel costs, inconsistency in staff availability, past negative experiences with resources, education courses being too long and costly for many villages to attend and contextually misaligned information all influencing poor resource use. Villagers also highlighted the growing impact that climate change is having on food production, with changes to seasonal patterns, increasing weather extremes, and crop failures leading to dietary changes and growing food insecurity. However, villagers, in general, do recognise the potential benefits of agricultural development resources and do want greater engagement. Both past engagement examples and international examples offer options for a way forward and there are positive signs on the horizon. The need for more effective and community focused engagement is only going to increase due to climate change, growing urbanisation, and increasing food insecurity and greater recognition of the local perspective will be essential in order to address the challenges to come.

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Table of Contents

Abstract	ii
Acknowledgements.....	iii
Tables and Figures.....	vi
Acronyms.....	vii
1 Introduction	1
1.1 Framing the Global Context	2
1.2 Framing the Research Location.....	4
1.3 Framing the Research Approach	6
1.4 Research Aim and Objective	6
1.5 Research Questions.....	6
1.6 Thesis Outline.....	7
2 Agricultural Development: Global and Local	8
2.1 Introduction	8
2.2 History of Agriculture in Vanuatu.....	9
2.2.1 Two Interests, one Country.....	9
2.2.2 Agricultural Education.....	10
2.3 Agriculture, Sustainable Development, and Economic Growth.....	13
2.4 Information and Communication Technology (ICT)	17
2.5 Employment, Migration and Scale	18
2.6 Pacific Education	23
2.7 Agricultural Extension Services	25
2.8 Climate Change	28
2.9 Food Security.....	29
2.10 Conclusion	32
3 Research Methodology	35
3.1 Introduction	35
3.2 Approaches to Research with Indigenous Peoples	36
3.3 Epistemology and Paradigm.....	37
3.4 Indigenous Research Methodology.....	38
3.5 Location.....	40
3.6 Time and seasons	43
3.7 Methods	44
3.7.1 Storian	44
3.7.2 Relationship building and participant observation	46

3.7.3	Language.....	48
3.8	Ethics	49
3.8.1	Institutional Ethics	49
3.8.2	Reflexivity and Positionality	50
3.9	Analysis.....	52
3.10	Limitations	53
4	Village Perception of agricultural education resources	55
4.1	Introduction.....	55
4.2	Modes of engagement	55
4.3	Perceptions around Engagement	60
4.4	Challenges for Village Agriculture	62
4.5	Future Perspectives	66
4.6	Summary of findings.....	68
5	Exploring Agricultural Resources.....	71
5.1	Introduction.....	71
5.2	Research Approach.....	71
5.3	Agricultural Education	74
5.4	Research	78
5.5	Industry Support.....	82
5.6	Outreach Education and Civil Society.....	84
5.7	Facing the Challenges	86
5.7.1	Engagement and collaboration	86
5.7.2	Climate Change.....	88
5.7.3	Youth and Migration.....	89
5.7.4	Information and Communication Technology (ICT)	89
5.8	Discussion Summary	91
6	Conclusion	93
	References.....	98
	Appendix A: Personal question check-list for storian sessions	105
	Appendix B: Human Ethics approval Memorandum	106
	Appendix C: English and Bislama project information sheets.....	107
	Appendix D: English and Bislama participant consent forms.....	112
	Appendix E: Transcriber Confidentiality agreement	116
	Appendix F: Vanuatu Cultural Centre research approval letter	117

Tables and Figures

Table 1: Summary of the research findings	69
Figure 1: Map of Vanuatu	5
Figure 2: Timeline of agricultural changes in Vanuatu.....	10
Figure 3: Changes in Aid to agriculture 1980 - 2008	15
Figure 4: Regional growth in mobile phone subscriptions.....	18
Figure 5: Map of Santo, Vanuatu, with the three research villages marked	43
Figure 6: Diagram of villagers' perceptions of agricultural development resources (left) and resources connections to financial stakeholders (right).....	80
Figure 7: Stages of the agricultural production process and information needs.	90
Figure 8: Mobile phone penetration rates in Vanuatu 2000 - 2015	91

Acronyms

ADB	- Asian Development Bank
AET	- Agricultural Education and Training
AgITO	- Agricultural industry training organisation
AILC	- Agricultural and Industrial Loans Committee
APTC	- Australian Pacific Technical College
CSOs	- Civil Society Organisations
DARD	- Department of Agriculture and Rural Development
EFA	- Education for All
FAO	- Food and Agriculture Organization of the United Nations
FFS	- Farmer Field Schools
ICT	- Information and Communications Technology
IRD	- Integrated Rural Development
IRCC	- Institute de Recherches Sur le Café et le Cacao
IRHO	- Institute de Recherches pour sur les Hulies et Oléagineux
LARCs	- Local Agricultural Research Committees
MALFFB	- Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity
MDGs	- Millennium Development Goals
NGOs	- Non-Governmental Organisations
ODA	- Official Development Assistance
OECD	- Organisation for Economic Co-operation and Development
OGCIO	- Office of Government Chief Information Officer
PNG	- Papua New Guinea
PRIDE	- Pacific Regional Initiatives for the Delivery of Basic Education
RTCs	- Rural Training Centres
SDGs	- Sustainable Development Goals
TEKS	- Traditional Entertainment and Kustom Support
TVET	- Technical and Vocational Education and Training
VET	- Vocational Educational Training

- VARTC - Vanuatu Agricultural Research and Technical Centre
- VRDTCA - Vanuatu Rural Development and Training Centres Association

1 Introduction

As a child, I always wanted to be an adventurer, roaming around, travelling to new places, living off the land, and meeting all types of interesting people. I was an active, outgoing country lad who couldn't keep still for five minutes, never mind pay attention at school all day. While I maintained reasonable grades, my mind was constantly wandering towards the adventures of life outside the class room. As I grew older, I spent many of my school holidays working on relations farms which directed my ambitions towards farming. My desire for travel and adventure did not completely fade into the background. After six years of farming followed by completing an undergraduate degree in Environmental Management, I set out for 10 months as a Volunteer Services Abroad (VSA) volunteer working with agriculture on the island of Santo, Vanuatu. As a volunteer working with the livestock division of an agricultural research farm, I developed a grass roots perspective of agricultural development in Vanuatu. The ten months went fast and before I knew it, I was back in New Zealand, but not without taking note of some of the challenges to agricultural development in Vanuatu; one of which was what I perceived to be a real disconnection between agricultural resources and rural communities. Agricultural extension training had played a big role in my own agricultural career. As a young farmer, I was encouraged to progress through the New Zealand Qualifications Authority accredited agricultural industry training organisation (AgITO) programme which supported me to develop a broad range of agricultural skills and technical knowledge, and ultimately become a more effective farmer. Recognising that similar resources were present in Vanuatu, but were not being utilised by rural communities made me want to understand the apparent breakdown between rural communities and resources. This is where the inspiration for my thesis started. However, through post-graduate classes, my ideas, perceptions and beliefs were challenged by Pacific lecturers such as Dr Cherie Chu, Dr Teresia Teaiwa and Prof Kabini Sanga who encouraged me to question my own understandings, perspectives and motivations. It was also through discussions around Pacific indigenous epistemologies, education, positionality, colonisation and decolonisation that a more in-depth understanding of my topic and methods began to evolve.

1.1 Framing the Global Context

Agriculture, education, development and poverty are all closely interconnected across most low-income countries (LICs). Around 75 percent of the world's poor are believed to live in rural areas with agriculture making up the main source of livelihood for around 85 percent of those rural households (Bezemer & Headey, 2008; Dethier & Effenberger, 2012). However, agricultural development funding has not always reflected agriculture's strong relationship with development and poverty alleviation, resulting in relatively low success rates in moving rural populations out of poverty (Gaiha, Imai, & Thapa, 2011). Reasoning against prioritising agricultural development in many LICs has included: the large overall cost involved with modernising many LICs' agricultural systems; rural diversification away from agriculture, which is making agriculture less important to rural household income generation; and that the linkages from agricultural growth play less of a role in more open, modern economies (Hazell, Poulton, Wiggins, & Dorward, 2010). However, counter-arguments point out the lack of alternatives to agriculture in LICs, especially in the context of the global market; the impact of not developing agriculture on the majority of the rural poor, on social stability, and on vulnerability to fluctuations in global food prices; and the argument that technology is reducing many of the costs to agricultural development such as through the use of information and communication technologies (ICT).

As the lifestyles of many of those who live in poverty are closely intertwined with agriculture, the reliance on agriculture within national economies is often a defining aspect LICs. For most LICs, agriculture tends to be the largest absorber of national labour, the main source of cheap food, and a key source of raw materials for manufacturing, often being referred to as the 'engine of growth' (Bezemer & Headey, 2008). Additionally, strong and positive relationships exist between education and agricultural development in many LICs (Reimers & Klasen, 2013). Because of this, effective agricultural development is a critical factor in moving many LICs along a more prosperous path and supporting millions out of poverty. Due to agriculture being intertwined in the livelihoods of many of those living in LICs, the challenges faced in agricultural development cover a broad range of social, economic, political, and environmental issues. Climate change, gender equality, urbanisation and employment are just a few of the issues that impact agricultural development in many LICs.

Due to the limited success of the Millennium Development Goals (MDGs), instability in commodity food prices, climate change and global food security concerns, there appears to be a growing global commitment to put greater resources into agricultural development (Ministry of Foreign Affairs and Trade, 2015; Rodríguez-Pose & Hardy, 2015; United Nations, 2015a). With this in mind, there is an increasing need to learn from past and existing agricultural development initiatives to improve on development outcomes in the future. However, while monitoring and evaluation reports of past projects can offer some insight into project successes and failures, these resources tend to take a Western-centric perspective of projects, which has arguably struggled to guide successful agricultural development. Understanding the grass roots perspectives can offer a deeper insight into project challenges and successes and shed light on issues not necessarily identified through evaluation reports (Chambers, 1994).

Within the Pacific context, there are few examples where evaluating and exploring agricultural development resources has been undertaken from the rural community perspective. While development reports have been commissioned by donor governments such as New Zealand and Australia (Cardno, 2014; Greer Consulting Services, 2008), these reports tend to identify issues through political, economic, geographical and institutional perspectives, brushing over cultural and community challenges and perspectives. This lack of community perspective is a contention that often stretches across the development sphere with development itself being criticised as a colonisation tool (Goldsmith, 1997). Pacific scholars (Gegeo, David W, 1998; Louis, 2007; Smith, L. T., 1999; Wane, 2009) have been especially critical over the past decade of Western-centric development approaches showing little regard for the Pacific indigenous context in connection to Pacific values, beliefs and epistemologies. These criticisms also apply to research where indigenous culture, history, and knowledge has been recorded and retold through Western interpretations and perspectives. These criticisms have led towards a push for decolonising Pacific research through the creation and use of research methodologies that better recognise Pacific indigenous paradigms.

Like many other LICs, Vanuatu relies heavily on its agriculture sector to meet the nutritional needs of the country (Cardno, 2014). However, agricultural development in Vanuatu has been shaped by its unique past under an Anglo-French condominium and, since independence in 1980, Vanuatu has struggled to create growth through its agricultural sector (Greer

Consulting Services, 2008). While much of Vanuatu's slow agricultural growth over the past two decades arguably stems from the 1994 civil service sector cuts in line with the neoliberal development agenda of the 1990s and 2000s, my experience in Vanuatu has led me to believe that engagement challenges between rural communities and agricultural education and extension resources may also be contributing to this limited development (Greer Consulting Services, 2008). Therefore, this research explores rural ni-Vanuatu perceptions around villagers' engagement with agricultural education and extension services, in the hope of better understanding the challenges that future engagement may need to address.

1.2 Framing the Research Location.

Of Vanuatu's 83 islands, Santo is the biggest at around 4,248 square kilometres and contains the largest proportion of Vanuatu's agricultural (see Figure 1) (Weightman, 1989, p. 1). With the colonisation by French and British nationals, Santo also became the home of two agricultural research institutes. Traditionally, Vanuatu agriculture was dominated by bush gardens that were cleared and planted for one year and then left to regenerate for several years; while the shifting garden system still plays a significant role in subsistence and semi-subsistence agriculture, there are growing pressures from local government and international donors for Vanuatu to develop its commercial agricultural sector (Weightman, 1989). This pressure is not new, with both the French and British heavily funding commercial agricultural development across Vanuatu from around the late 1960s (Weightman, 1989). However, despite significant investment by foreign governments, the growth of the commercial agricultural sector has been slow with few villagers expanding beyond semi-subsistence agriculture (Greer Consulting Services, 2008). Currently around 80 percent of Vanuatu's population still rely on subsistence or semi-subsistence agriculture for their everyday wellbeing (Vanuatu Government, 2014, p. 8). Understanding the challenges around improving Vanuatu's agricultural growth are especially relevant today; in June 2016, the Vanuatu Government, European Union (EU) and New Zealand Government agreed to a partnership committing increased financial assistance towards agricultural development in Vanuatu (beehive.govt.nz, 2016). With this increases funding in mind, this research aims to contribute new perspectives to the agricultural development sphere, which has so far struggled to support sustained growth in Vanuatu.

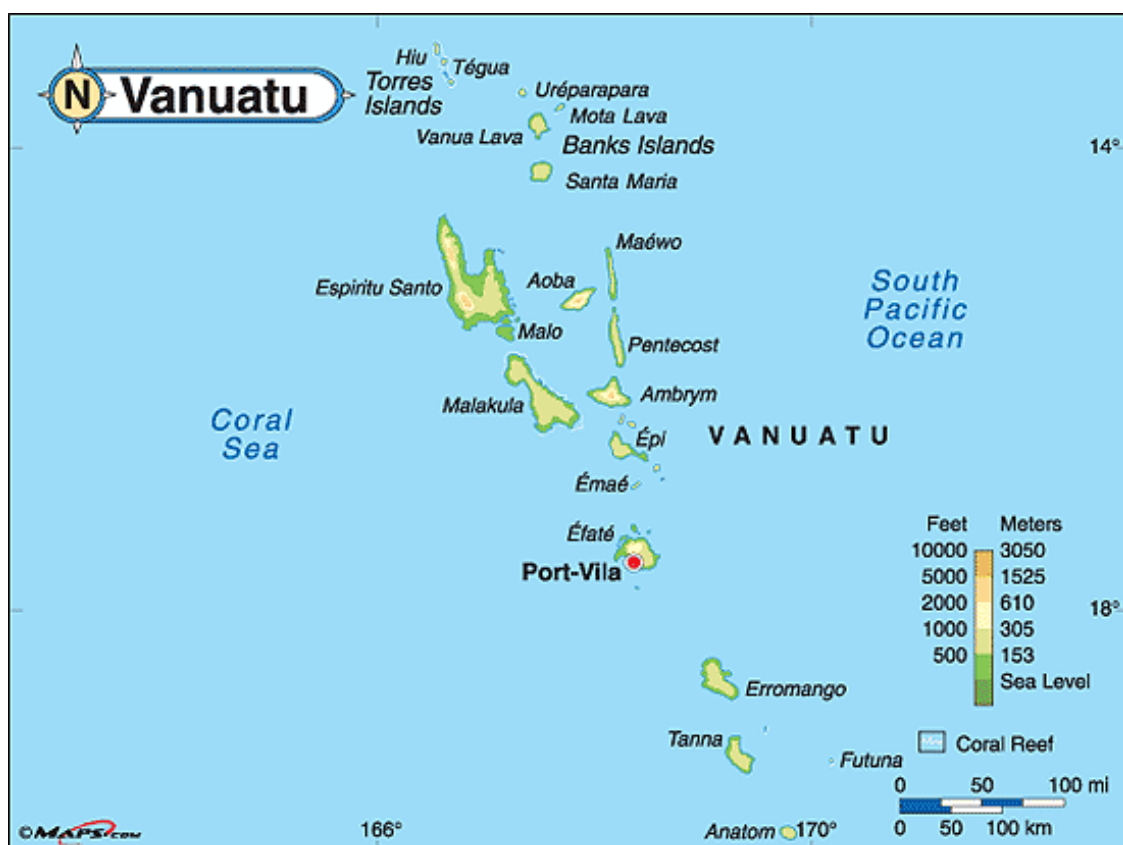


Figure 1: Map of Vanuatu

Note: map shows the main islands with Espiritu Santo north-north-west of the capital Port-Vila.

While the potential for growth in commercial agricultural is well recognised, there are multiple agricultural challenges within Vanuatu's rural communities that also need to be addressed. These include climate change, food security, urbanisation and youth migration, are just some of the challenges that Vanuatu's agricultural sector plays a role in addressing which are covered in this research. However, this diversity of issues also creates challenges over the prioritisation of development agendas as there are often not enough resources to address all the challenges to the same extent. In addition, there seems to be limited research exploring how best to undertake development with rural ni-Vanuatu communities, especially in relation to agricultural development which incorporates many different facets of ni-Vanuatu culture and livelihood. This research aims to bring the rural villagers' perspectives to the fore in order to refocus some of the development attention away from the large scale commercial agricultural development, and back towards the grass-roots agricultural challenges, and to highlight the importance of engaging with the cultural context in addressing those challenges.

1.3 Framing the Research Approach

A significant component of this research has been my research approach, as research undertaken with indigenous communities incorporates numerous issues around ethics, power, culture and positionality. Over the past two decades, indigenous scholars have become increasingly critical and vocal about traditional Western-centric approaches to research (Gegeo, David Welchman & Watson-Gegeo, 2002; Smith, G. H., 1997; Smith, L. T., 1999; Thaman, 2003). Evolving from these criticisms, new indigenous research methodologies have been created that better recognise cultural paradigms and Western-centric failures. In my first year of post-graduate study, I completed two university papers exploring Pacific indigenous research theories and methodologies as well as indigenous education. These two courses helped to shape my research approach and guided me towards the use of a Pacific Indigenous research methodology. Relationships, traditional ni-Vanuatu concepts, language and positionality, are all fundamental components of my research design and approach.

1.4 Research Aim and Objective

The objective of my research is to explore rural ni-Vanuatu perspectives on what affects and influences engagement between rural ni-Vanuatu communities and agricultural education and extension services. This research has a secondary aim of identifying agricultural issues that are of concern to rural ni-Vanuatu villagers, that agricultural education and extension resources could potentially support. Through understanding engagement issues from villagers' perspective, this research can help shed light on how strongly these issues affect engagement and contribute to identifying more effective ways of encouraging two-way engagement. Ultimately this research could help to improve both the effectiveness and efficiency of agricultural development resources and contribute to more beneficial agricultural development outcomes for rural communities.

1.5 Research Questions

To achieve my aims and objectives, I have relied on three primary research questions to guide my research. These are:

1. *In what ways do villagers engage with agricultural education and extension resources?*
2. *What are the ways in which villagers feel engagement is encouraged and discouraged between rural communities and agricultural education and extension resources?*
3. *What are some of the areas in which villagers feel that greater engagement could help them and their community?*

1.6 Thesis Outline

This thesis begins with this introduction chapter which outlines the research focus and the framing of the research context. This is followed by the literature review in Chapter Two that explores Vanuatu's unique colonial and agricultural history in connection to the country's present day agricultural development, before exploring the global context around agricultural development and challenges associated with agriculture in LICs. As agriculture is integrated into so many aspects of life, this literature is kept broad to encompass the many frames of context such as employment, education, food security, poverty and development, and the economy, that all feed into the agricultural development sphere.

Chapter Three outlines the research methodology, highlighting some of the issues that I encountered and addressed through my field research, describes my qualitative research methodology, and discusses my epistemological stance and ethical considerations, before highlighting some of the limitations of my research.

Chapter Four brings together my key findings. Here, drawing on my three research questions, I identify the main forms of engagement occurring between rural villagers and agricultural education and extension resources. I then expand on these forms of engagement through identifying the dominant perspectives associated with engagement with different agricultural development resources and the agricultural development challenges that villagers feel are important to be addressed in the future.

Chapter Five is the discussion chapter in which the findings are discussed in connection to their implications and the broader context. Here, I discuss the role different agricultural education and extension services can play in agricultural development, and options to better support more community focused approaches. I also draw on the predicted reality of future environmental scenarios, to discuss the importance of addressing engagement challenges now and to better support agricultural development in rural villages.

Chapter Six concludes the thesis by reiterating the key points and trends covered through this research to better frame the new understanding of engagement between rural ni-Vanuatu villagers and agricultural development resources. It identifies how this research can be used to better support future engagement and potential pathways for further research.

2 Agricultural Development: Global and Local

2.1 Introduction

For those living in LICs, agriculture plays a vital part in the everyday life and survival of a large proportion of the population (Rodríguez-Pose & Hardy, 2015). Because of its importance to survival for so many, agriculture continues to be of central importance to development, despite rapid and increasing urbanisation. Not only does agricultural development benefit those working in agriculture but agricultural development often has positive impacts on other sectors that are important to achieving an array of development goals, including many listed in the Sustainable Development Goals (SDGs) which are discussed in section 2.3 (Gaiha et al., 2011). However, agriculture is not an industry that can be developed in isolation from history, culture, geopolitics, climate change, globalisation and urbanisation that are constantly influencing and shaping the agricultural development sphere. Agriculture is interconnected with many different aspects of life and development in LICs. Therefore, it is important to understand how agriculture shapes rural lives and is shaped itself through these interconnections with other aspects of society and environment on multiple scales, from the global to the local. Therefore, to properly understand the role of agricultural development and extension services in Vanuatu, this chapter reviews the literature on different factors that influence agricultural development in Vanuatu.

Because large proportions of the population in LICs rely on agriculture, not just for sustenance but also as a way of life, agriculture is integrated into many different aspects of society and vice-versa. In recognising this, this chapter is broken into five sections. Each section draws on the wider literature to better frame the relationships between agriculture, society, development, and environment. While most of this chapter draws on literature from the global context, the first section focuses on Vanuatu's historical context, and therefore is confined to the limited literature on this topic. In the second section I look at agriculture's potential role in development, connecting agriculture with poverty alleviation, development objectives, and the changing development approaches to agricultural development in LICs. The third and fourth sections return to the Pacific context, with section three looking at the agricultural connections to some of the challenges facing LICs in the Pacific such as employment, migration, and economies of scale. Contentions around Western influences on education agendas and the role of second chance education, such as technical and vocational education and training (TVET) or agricultural education and training (AET), are discussed in

section four. Lastly, section five starts to explore some of the challenges that Pacific Islands are expected to face in the coming decades with climate change and food security posing major threats to the current way of life across the Pacific.

2.2 History of Agriculture in Vanuatu.

2.2.1 Two Interests, one Country

Vanuatu has a unique, historical context that has affected its agricultural development to a large degree. This chapter briefly covers the major historical influences and changes to agriculture in Vanuatu over the past 200 years. The first permanent Melanesian settlements in Vanuatu are thought to have been established around 2000 years ago. Between the time of the first Melanesian settlements, up until around 1845 when the first European settlers are believed to have arrived, traditional agriculture in Vanuatu was characterised by cultural practices, social structures and an economy where ‘economic choices were governed by the logic of a system of cultural exchanges and prestations’ (Weightman, 1989, pp. xix-xx, 30-31). Food was predominantly produced through subsistence gardens where ‘systems were . . . typically horticultural, in which the art of gardening, the cunning nurturing of individual plants, predominate[d] over agriculture which implies tilling and seeding the soil’ (Weightman, 1989, p. 31). A significant proportion of food production was grown for feasts, which were a way of creating and defining status amongst neighbouring communities. Status was not awarded for how much one had but rather how much one gave to others as, through giving food and resources, an obligation or debt arose for which the recipient was expected to return in kind (Weightman, 1989). This traditional agricultural system gave a great deal of resilience to ni-Vanuatu communities while also playing a fundamental role in interisland trade and the development of traditional practices such as ‘naghol’¹ (Cheer, Reeves, & Laing, 2013; Weightman, 1989).

The introduction of Christian missionaries and Western settlers in the mid-1800s opened up trade routes with Europe and Britain and introduced the concepts of individualism and a cash economy to the indigenous population (Weightman, 1989). These Western concepts started to take root amongst indigenous communities and, as trade with both the French and British grew, so too did the focus on the production of cash crops such as cotton, maize, coconut, coffee, and cocoa. However, as Weightman (1989) suggests, this growing preoccupation with

¹ Naghol is the Bislama name for the practice of land diving which traditionally takes place over April, May, and June to coincide with the yam harvest in the southern part of the island of Pentecost.

cash cropping also led to a devaluing of the social importance of feasts throughout Vanuatu. As the trade interests of the French and British grew, large areas of land began to be removed from indigenous ownership through questionable land deals. The local ni-Vanuatu were virtually powerless against settlers taking their land as Gregory (2003, p. 69) quotes from Jocomb (1914, p. 136) ‘if a white man wishes to take a native’s land, he can do so with impunity. The only way in which the native could prevent the white man remaining on his land would be to turn him out by force’. However, concerns grew between both colonial powers over the annexation of Vanuatu by one power or the other (Gregory, 2003; Weightman, 1989). In 1878 an Anglo-French agreement was signed guaranteeing Vanuatu’s independence but, despite this agreement, both powers continued to try and undermine the influence of the other while continuing to undertake disputable land acquisitions (Jolly, 1992). In 1906 after much pressure from the English, an Anglo-French Condominium was established for the dual governing of Vanuatu which would last through to Vanuatu’s official independence in 1980 (Jolly, 1992; Weightman, 1989). See Figure 2 below for a summary timeline of events.

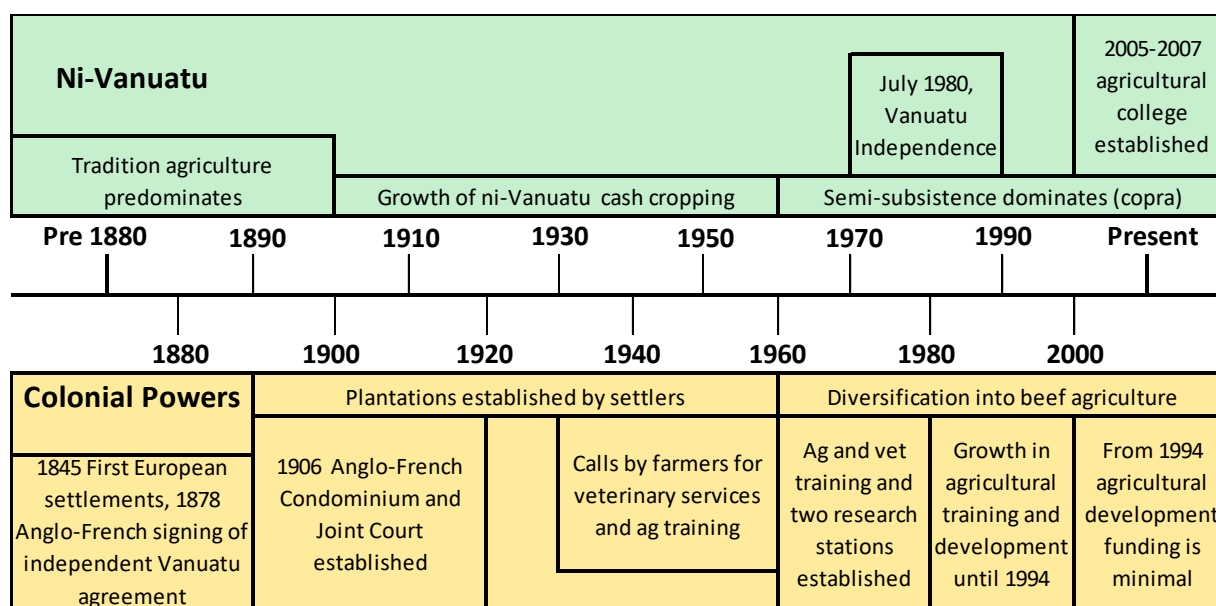


Figure 2: Timeline of agricultural changes in Vanuatu.

Note: the yellow indicates the timeline of colonial activities while the green indicates the timeline of changes occurring within ni-Vanuatu communities.

2.2.2 Agricultural Education

Little had been established in the way of agricultural education before the 1960s despite reported requests by both French and English plantation owners for the establishment of training facilities and veterinary services (Weightman, 1989). However, as livestock production began to grow, the need for veterinary services and husbandry training opened

the door for an Agricultural College on Efate (Tagabe Agricultural College), two research stations on Santo and the employment of extension officers (Weightman, 1989). Unfortunately, both the French and English systems tended to work independently of each other with little collaboration or co-ordination; 'extension work became more difficult due to the political polarisation of island communities into camps of basically francophone-Catholic-'Moderate' party supporters or Anglophone-Protestant-'National' (later Vanuaaku) Party supporters' (Weightman, 1989, p. 20). However, one of the most significant developments over this period was the growth in access to financial support for ni-Vanuatu farmers through the Condominium Agricultural and Industrial Loans Committee (AIRC). The AIRC allowed smallholder farmers access to farm credit to undertake land development and buy some stock (Weightman, 1989). The access to credit allowed many subsistence communities to set up smallholder units and enter the cash economy on customary land². However, AIRC experienced difficulties in recouping loan repayments and, by around the late 1970s, it had stopped granting loans. Around the same time, funding from the Development Bank of Vanuatu was growing and diversifying so that a greater proportion of Development Bank loans were going to livestock projects. This increased the availability of financial resources to help smallholder units and played an important role in sustaining agricultural development through to independence in 1980 (Weightman, 1989).

Vanuatu officially regained its independence on July 30, 1980, and, although little changed in agricultural development in the first few years, the new Republic of Vanuatu began to re-establish and diversify its agricultural sector (Weightman, 1989). Independence brought the ability to focus on one agricultural agenda. Through the First National Development Plan 1982-1986, the Vanuatu government began to take steps to diversify the economy away from a reliance on copra and began to focus greater attention towards local issues such as nutrition, participation and training, management and ownership, and market development (Weightman, 1989). During the early 1980s, the Department of Agriculture and Rural Development (DARD) staffing levels were increased, and new services such as field assistants and agricultural advisors were taken on. However, new funding had not been secured to sustain the increased growth, and the department found it difficult to maintain projects and staff levels (Weightman, 1989). This led to the Tagabe Agricultural College on Efate being closed in 1985, with future students having to head to the University of the South Pacific (USP)

² Custom land is land communally owned by a community through ancestral rights and ownership.

in Fiji or to agricultural colleges in Papua New Guinea (PNG) to complete any formal agricultural training. However, research continued through the research stations on Santo (now called Vanuatu Agricultural Research and Technical Centre [VARTC]) with assistance from the Australian Centre for International Agricultural Research (ACIAR). While Vanuatu agricultural development had been refocused towards local needs, it was also heavily funded through foreign aid, maintaining an avenue for foreign influence.

Although Vanuatu had attained independence in 1980, the nation retained a level of political polarisation established through the years of the Anglo-French Condominium. In 1994, a change of government saw a move towards a Francophone aligned government and a dramatic reduction in government prioritisation of rural development and the dismissal of many Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF) staff. From the late 1990s through to the end of 2008, the development agenda in Vanuatu was based on a Comprehensive Reform Programme (CRP) approach being pushed by many of the bigger multilateral development institutions such as Asian Development Bank (ADB) (Greer Consulting Services, 2008). The CRP was first introduced to Vanuatu in 1997, aligning the Vanuatu development focus with the neoliberal development agenda dominating global development practice of the 1990s and 2000s (Greer Consulting Services, 2008; Murray & Overton, 2011). The neoliberal development ideology saw government bureaucracy and regulation as a restraint to market growth and development (Murray & Overton, 2011). With this in mind, the CRP approach was designed to reduce the financial and bureaucratic footprint of the government to allow the private sector to respond better to market forces (Greer Consulting Services, 2008; Murray & Overton, 2011). As part of the CRP approach, further staff cuts to MAQFF followed the 1994 civil service cuts leaving agricultural extension services stagnant and putting a hold on many agricultural development programmes (Greer Consulting Services, 2008). Little changed over the 2000s except for the construction of an agricultural college between 2005 and 2007 on the island of Santo which was funded by China as part of an emerging agricultural partnership between the two countries and the changing global aid environment in the Pacific (Vanuatu Agricultural College, 2016).

In sum, over the past 200 years, colonial pressures have been the driving force for change of the agricultural landscape in Vanuatu. Some of these changes have affected traditional processes of food production and distribution through driving agricultural practice towards monetary trade in the formal economy and weakening traditional non-monetary means of

food and resource distribution. Large areas of land were acquired by colonial nationals through questionable land deals, legal systems favoured colonial rights over indigenous rights, while the contestations between the French and British over power and influence persisted through to independence in 1980 with aspects of external influence remaining through aid. Political polarisation, inefficiencies and duplication of resources all meant that Vanuatu remained a divided country throughout a period that offered the potential for major agricultural and economic growth. Although independence has allowed agriculture to be re-prioritised under one political agenda, financial and political circumstances have meant little progress in agriculture has been made over the past 35 years.

2.3 Agriculture, Sustainable Development, and Economic Growth

Agriculture is the backbone of food production in almost every LIC, and agriculture also tends to have strong links with many off-farm industries and development processes. For example, increases in on-farm agricultural productivity can lead to higher rural wages which can then, in turn, lead to wage increases in other high labour areas such as manufacturing (Dethier & Effenberger, 2012). It is also often the productivity gains in agriculture that have enabled the growth towards industrialisation through the excess production of raw goods required in manufacturing and urban industry (Bezemer & Headey, 2008; Dethier & Effenberger, 2012). These connections from agriculture to other industries were also supported by Bezemer and Headey (2008) who found that 'all cross-country studies which attempt to gauge the sectoral sources of aggregate growth in LICs find that agricultural gains have the strongest linkages of all sectors to growth in other sectors and to aggregate growth' (p. 1345). It was also found by Ravallion and Datt (1996) and Kaya et al., (2013) that while urban growth tended to reduce poverty in urban areas of India, rural growth tended to reduce poverty rates in both urban and rural areas. This indicates that to truly understand the total benefit of agricultural development projects, the wider range of outcomes of indirect outcomes should be evaluated.

Agricultural development also tends to be counted as pro-poor development since agriculture in LICs tends to be labour intensive while requiring minimal training at the basic level. This means increased agricultural investment can increase jobs that have low barriers to entry (Biriwasha, 2012). Agricultural productivity tends to have a direct effect on the cost of food which affects the poor the greatest as it is the poor who spend the greatest proportion of their income on basic food items. Positive relationships between agricultural expenditure,

agricultural official development assistance (ODA), agricultural investment and agricultural technology have all been found to increase GDP growth, and in turn, help reduce poverty in LICs (Bezemer & Headey, 2008; Gaiha et al., 2011). The effect of increased food productivity on poverty has even been quantified by Irz et al., (2002) as cited by Kaya et al., (2013, p. 585) who found that 'a 1% increase in crop productivity reduces the number of poor by 0.72% in Africa and by 0.48% in Asia'. However, while there is no shortage of literature supporting the positive relationships between agriculture and poverty reduction (Bezemer & Headey, 2008; Burch et al., 2007; Dethier & Effenberger, 2012; Irz et al., 2001; Organisation for Economic Co-operation and Development [OECD], 2005; Swarts & Aliber, 2013; White, 2012) the relationship between aid and agriculture has not been as strong.

Despite agriculture's prominence amongst the poor in LICs, the agricultural sector has not always received a great amount of attention in global aid budgets and has experienced limited growth over the past half century. Over the 1950s and 60s, agricultural development received relatively high levels of financial support with the World Bank, UN and Donor governments predominantly funding a community-based approach where civil servants and industry experts would often work alongside communities to manage community resources and set up development plans (Dethier & Effenberger, 2012). However, by the mid-1960s, many of the programmes had been stopped due to limited success, often linked to poor resourcing, and the persistence of prevailing power structures including issues with traditional elites holding back programmes from communities through directing resources away from where they were needed (Dethier & Effenberger, 2012, p. 192). In the 1970s, evidence of slowing economic growth amongst many LICs led to a change in approach for global agricultural development. A new Integrated Rural Development (IRD) approach became popular amongst the many of the larger aid organisations such as the World Bank and USAID. IRD focused solely on the poor with two key objectives, improving agricultural productivity and meeting basic needs through health and education services. (Dethier & Effenberger, 2012; Ruttan, 1998). However, this approach also proved relatively unsuccessful with reviews identifying many projects as 'unsustainably costly' (Ruttan, 1998). By the early 1980s, support for the IRD approach had dwindled and as the new neoliberal approach to aid started to dominate the aid agenda, donors began to turn their attention away from direct agricultural assistance (Ruttan, 1998).

The neoliberal aid agenda of the 1980s and 1990s marked a move away from community and producer orientated interventions towards the more market-oriented side of the agricultural sector (Bezemer & Headey, 2008). This shift also marked the start of a downward trend in the proportion of Official Development Assistance (ODA) going directly to the agricultural sector (Figure 3). It wasn't until the start of the 21st century that attention started to shift back towards the rural poor within the agriculture sector with the Millennium Development Goals (MDGs) placing direct emphasis on poverty eradication for which agriculture is a significant contributor. This renewed sense of promise was supported by calls to increase spending on agricultural development through the Financing for Development meeting in 2002, the Johannesburg World Summit on Sustainable Development in 2002 and the Evian G8 meeting in 2003 (OECD, 2005). Rising global food prices which were partly credited to the cutbacks in agricultural spending over the 1980s and 1990s, along with major climate events in Russia and Pakistan effecting global grain production. These events highlighted the vulnerability of global food security towards the later part of the 2000s. Accompanying these major global events were two influential reports, the *World Development Report 2008* (Akram-Lodhi, 2008) and *Agriculture at a Crossroads* (International Assessment of Agricultural Knowledge Science and Technology for Development, 2009). These reports reinforced the relationships between agriculture and those in extreme poverty and emphasised the need for greater global attention to the agricultural sector (Akram-Lodhi, 2008; Dethier & Effenberger, 2012; Kaya, Kaya, & Gunter, 2013). Now, after three decades of neglect, there are indications that the OECD might again be willing to give agricultural development greater attention and resourcing.

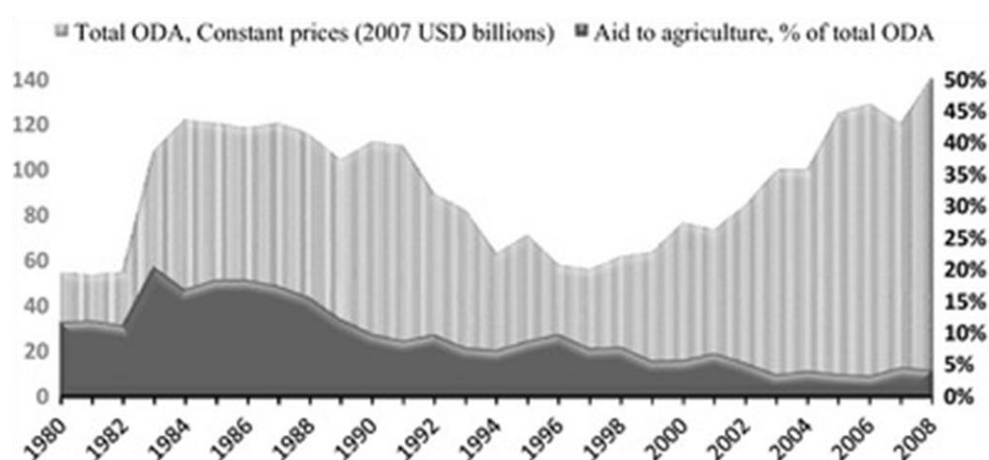


Figure 3: Changes in Aid to agriculture 1980 - 2008

Note: Graph shows total Official Development Assistance (ODA) since 1980, US\$ billion, constant 2007 prices; ODA to agriculture as a percentage of total sector-allocatable ODA, US\$ billion, constant 2000 prices. Source: OECD:

The increased funding and attention towards agriculture in development has coincided with the development of the Sustainable Development Goals (SDGs) that frame the new global agenda for development to 2030, with agriculture explicitly addressed in Goal 2: Zero Hunger - end hunger, achieve food security and improved nutrition, and promote sustainable agriculture (United Nations, 2016). In addition, agriculture is directly linked to multiple other SDGs such as Goal 1: end poverty in all its forms, Goal 5: achieve gender equality and empower all women and girls, Goal 8: promote inclusive and sustainable economic growth, employment and decent work for all, Goal 9 on industry, innovation and infrastructure, 10 on inequalities, 11 on sustainable cities and communities, 12 on responsible consumption and production, 13 on Climate change and Goal 15 on sustainable land management (United Nations, 2016). To achieve all these goals, it will be important that agricultural development is given high prioritisation in future development agendas (Canavan, Graybill, Fawzi, & Kinabo, 2016; Schmidt-Traub & Sachs, 2015). However, while increased agricultural production in LICs can help increase nutrition and decrease poverty, it can also contribute to growing environmental problems such as deforestation, greenhouse emissions, and nitrate leaching. Agriculture globally accounts for around 33 percent of all greenhouse emissions, is the biggest source of nitrogen release into the biosphere contributing to eutrophication in freshwater and coastal regions, and has been the largest driver of land use change such as deforestation (Schmidt-Traub & Sachs, 2015, p. 70).

Agriculture is also often regarded as one of the least productive areas for economic growth in regards to returns on investment, which is an argument often used to draw funding away from agriculture, despite agriculture's indirect benefits to growth, employment and poverty alleviation (Dethier & Effenberger, 2012). Over the past 50 years, achievements through agricultural development have been relatively limited in relation to the total funds and resources the sector has received through official development assistance (ODA) (Fleming, E. M. & Fleming, 2006). Fleming and Fleming (2006) identified Vanuatu, Fiji and Papua New Guinea as all having decreasing returns in relation to farm resource input between 1970 and 2002, and the Solomon Islands only having a very slight increase in returns despite millions of dollars' worth of aid being invested there. Total factor production³ through significant

³ Total factor production is the residual growth in total output of a firm, industry, or national economy that cannot be explained by the accumulation of traditional inputs such as labor and capital.

improvements in agricultural research and extension services are recognised by Fleming and Fleming (2006) as the development areas required to increase the overall returns to resource input for agriculture. Despite the study by Fleming and Fleming not considering agriculture's contributions to growth in other areas, it does help to highlight some of the challenges in justifying significant financial commitments to agricultural development.

2.4 Information and Communication Technology (ICT)

With the expansion of mobile telecommunications networks across the world and the growing penetration of mobile ownership across LICs (see Figure 4), the role of information and communication technologies (ICT) in supporting smallholder farmers in contributing to agricultural growth is growing. Sub-Saharan Africa went from around 16 million mobile phone subscriptions in 2000 to 376 million subscriptions in 2008 (Aker & Mbiti, 2010, p. 210). This has been largely supported through global initiatives such as the Information and Communication Technologies for Development (ICT4D) initiative which aims at bridging the 'digital divide' between high income countries (HICs) and LICs (Duncombe, 2012). The increasing levels of mobile phone ownership have also been accompanied by expanding communication networks (Rashid & Elder, 2009). The expansion of ICT networks across LICs means a growing proportion of those living in poverty are getting access to easier and cheaper means of communication and information exchange. For example, rural farmers and fisherman across East Africa and India are able to use their mobile phones to get up to date prices for their crops instead of having to make costly trips to the nearest market (Rashid & Elder, 2009). In Sri Lanka, the cost of information – from deciding what to grow, to selling their crop at the market – was estimated to make up 11 percent of the total crop production cost (de Silva, 2008). In health, mobile phones have been used to send notifications and reminders of when patients need to take their medication, and in disasters, mobile phone technology has been utilised in warning the population of major natural events such as tsunamis, cyclones and flooding (Rashid & Elder, 2009).

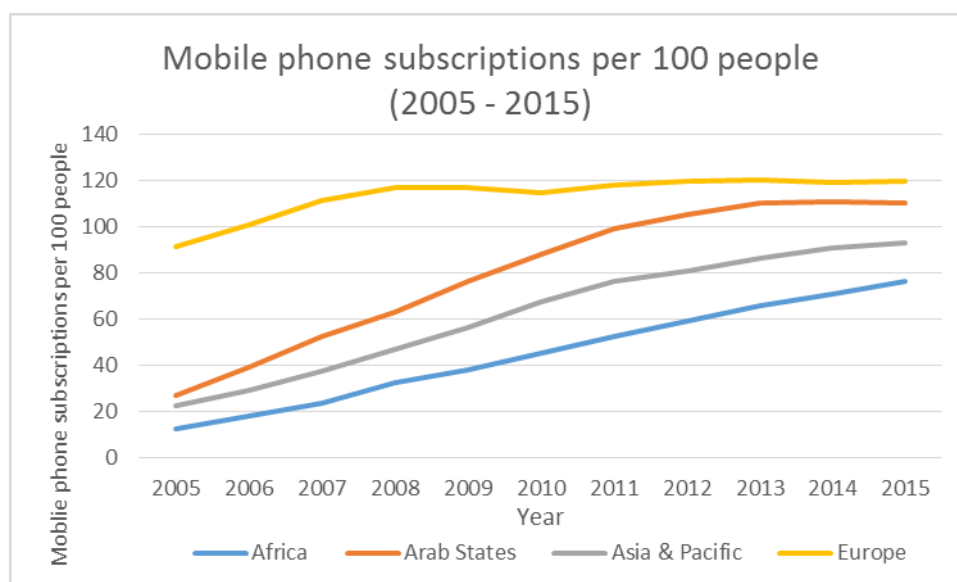


Figure 4: Regional growth in mobile phone subscriptions

Note: graph shows the growth in mobile phone subscriptions per 100 people across four global regions between 2005 and 2015. Retrieved from <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> on November 4, 2016

Because of the relatively low costs of use associated with basic mobile phones, the rapid expansion of mobile phone access and ownership has also opened up new ways of engaging with a large proportion of those living in LICs. This is, in turn, creating new opportunities to better reach out to those in poverty who can benefit from greater access to useful information. The ability of agricultural education systems and extension services to adapt to the changing demands of agricultural development will be heavily impacted by the ability of countries to utilise emerging technological developments. Over the past fifteen years, mobile phone penetration in LICs has dramatically increased (Figure 4) and while the use of ICT systems to support agricultural education and extension programmes is only just beginning to be utilised, there are already examples of its potential impacts in supporting agricultural field agents' effectiveness and reducing the operational costs of some extension services (Aker, 2011; Nakasone, Torero, & Minten, 2014). These growing developments have the potential to enhance both direct and indirect engagement between resources and rural communities through reducing engagement costs for farmers, increasing the availability of information and allowing the farmers to better choose the information that is relevant to their context.

2.5 Employment, Migration and Scale

While technological advances have the potential to support rural growth, it is the urban centres that tend to be perceived as the focal points for modernisation, often drawing in

many from rural villages who see urban centres as a place of opportunity. However, for a significant number of LICs, the agricultural sector still remains the largest absorber of labour and, in many cases, a large proportion of that labour is still based around subsistence agriculture. However, since the 1960s, growing urbanisation means increasing numbers of people have been moving away from the traditional rural livelihoods to live in urban centres including in the Pacific. For example, in the 1960s Suva and Noumea were the only centres within the Pacific Islands with populations over 25,000 people; however they now contain some 250,000 and 160,000 people respectively and, if one excludes PNG, over half of all Pacific Islanders now live in urban centres (Connell, 2011, p. 122). Urban areas are seen as opportunities for a better life by many of those living in rural areas, especially those struggling to meet the modern costs of education and healthcare. At the same time, those living in urban areas often see the old rural life as backwards, impoverished, physically demanding and lacking opportunity for a financially prosperous life (White, 2012).

These perceptions have often been encouraged and supported by educational institutions and government policies favouring urban centres and degrading farming as an occupation. The institutional neglect and downgrading of agricultural occupations are highlighted by Katz (2004) in Sudan's Blue Nile region, while Biriwasha (2012) highlights similar issues in Zimbabwe. Partly because of the often institutional neglect of the agricultural sector in many LICs, increasing amounts of people are migrating to urban areas, putting pressure on urban infrastructure, reducing the potential for growth through rural development and often weakening cultural connections (Connell, 2015; Swarts & Aliber, 2013). While many of those who migrate to urban centres still maintain their roots in their home village, there are growing numbers of second and third generation urban families that no longer have that connection with their ancestral village, potentially losing touch with aspects of their identity and culture. This loss of connection can also mean that the social safety net village life can often provide may no longer be available for some of those living in urban areas (Connell, 2011; White, 2012).

With youth⁴ (15 to 29 years old) making up the largest proportion of migrants moving to urban centres, this can not only create challenges at the village agriculture level, but can also

⁴ There is no unanimous definition for the term 'youth' as the term youth is often seen as a bridging phase between child and adult, and has two forms of common use: 'youth' as people (like children and adults) and 'youth' as a state of being young (like 'childhood' and 'adulthood') (White, 2012, p. 2).

create social and economic challenges at the regional and national levels as well. According to the *Towards Solutions for Youth Employment* report (Goldin, 2015, p. 1), in 2015 there were 1.8 billion young people (15 to 29) accounting for around one-sixth of the world's population. Of that 1.8 billion, it is estimated that 85 percent of them live in developing or emerging countries. The high levels of youth migration can create rural demographic changes with high levels of the ageing population being left to maintain rural production (Chang, Dong, & MacPhail, 2011). One of the growing challenges for rural development has not only been to retain youth in the agricultural sector, but also to attract high achieving and motivated youth that are willing to take up new agricultural and rural development opportunities.

Youth account for around 40 percent of the world's unemployed, with rural unemployment rates often being higher than urban unemployment rates in LICs (Goldin, 2015; White, 2012). In the Pacific, youth unemployment has often been associated with inadequacies in Pacific education systems through the inability of education systems to address country-specific education needs through curriculums and second chance education⁵ (Coxon & Munce, 2008). With growing negative connotations around agriculture amongst youth, higher achieving school students in rural Pacific communities tend to be encouraged away from rural occupations and towards urban job opportunities requiring them to migrate to urban centres (Connell, 2011; White, 2012). These high levels of rural to urban migration can mean higher proportions of those with lower levels of school education are left to take up what agricultural and rural jobs are available, and this places limitations on the potential for growth of the agricultural sector. Higher achieving students that choose to migrate to the urban centres are often faced with the challenge of finding a job despite having a good level of education. The challenges around job availability for the higher educated across the Pacific is largely due to education levels over the past decade rising at a greater rate than the skilled job market (Clemens, Graham, & Howes, 2015; Connell, 2011).

It is also believed that globally, large proportions of employed youth are either underemployed or overemployed in LICs (Goldin, 2015). Even for those who can attend university and finish their qualification, it is believed that many will likely struggle to find a job or will end up working in a job with little relevance to their qualification (Msigwa & Kipsha, 2013). More and more youth are migrating to urban centres in search of opportunity.

⁵ Second chance education refers to education opportunities that allow early school leavers to acquire skills and education outside of the formal classroom (Coxon & Munce, 2008).

For many of the unemployed youth in urban centres there comes the challenge of dealing with idle time (White, 2012). Due to being commonplace within some societies, this stage in many youths' lives, where they must simply wait and pass the time, has even developed its own label in some cultures such as 'waithood' in the Middle East or 'timepass' in India (Goldin, 2015). However, this excess of free time can also lead to negative social behaviours such as crime, alcoholism, drug use and gambling contributing to what is often referred to in the literature as the 'youth problem' (Connell, 2011). Narayan and Duncan (2008) adds to this with the risk of civil unrest associated with high levels of disillusioned male youth, referring to Papua New Guinea (PNG), Fiji and the Solomon Islands as examples. A question to be asked from this is could unemployed urban youth be given greater opportunities through rural development?

As mentioned, economic growth through agricultural development in many LICs has been slow, especially in Melanesian countries. This lack of economic growth has led to some critics questioning a prioritisation of agriculture in rural development when non-farm income sources can often contribute 35 - 50 per cent of rural household incomes and have demonstrated good growth to input potential (Haggblade, Hazell, & Reardon, 2010, p. 1). Others have questioned the effectiveness of small-holder farm development over economies of scale in agricultural development (Biriwasha, 2012; Bryceson, 2002; Byres, 2004). While there are clear benefits to developing rural non-farm employment opportunities and income diversification, agricultural development remains the highest contributor towards poverty alleviation through employment, food and resource production (Bezemer & Headey, 2008). The argument for long-term prioritisation of the non-farm economy over agricultural development would ignore the indirect contributions agriculture makes to development that the rural non-farm sector would struggle to replace (Biriwasha, 2012; Haggblade et al., 2010). However, there is clear evidence in the literature to suggest that the non-farm rural sector has the potential to help absorb a large number of the rural unemployed, helping to increase household incomes and reduce poverty and therefore should play a role in a rural development framework (Rodríguez-Pose & Hardy, 2015).

Another area of debate and contention within agricultural development are the benefits of agricultural economies of scale in LICs. For many LICs, small farm sizes mean large proportions of the rural population have access to a subsistence lifestyle while globally it is often argued that larger farm units are more efficient and have lower running costs (Hazell, Poulton,

Wiggins, & Dorward, 2010). Two-thirds of the rural population living in LICs live on farms less than two hectares in size, yet the focus through the global aid agenda tends to prioritise commercial agriculture. The argument here is that economic growth through economies of scale is deemed to be a better way to reduce poverty. This is achieved through making the agricultural sector more competitive in commodity production, utilising technological advances and getting more benefit out of the high costs involved in getting individual farms up to a globally competitive level (Hazell et al., 2010; Rodríguez-Pose & Hardy, 2015). However, research results looking at smallholder farms have often found that running costs for small family run units tend to be lower due to the lack of external labour required and can often return higher gross returns per hectare than larger commercial farm units (Hazell et al., 2010). Smallholder agriculture development is also increasingly seen as pro-poor as it directly affects the most vulnerable through improving access to affordable food, employment and education (Hazell et al., 2010).

While many past examples of economies of scale in agricultural development have shown the limited trickle-down effect and limited or even negative effects on reducing regional poverty levels⁶, others have been found to have positive effects on increasing household income leading to improved education opportunities (Hazell et al., 2010). While there are pros and cons on both sides and ultimately individual country context should be the most significant factor in the development approach, it is also important to realise that resources can support both subsistence agricultural development as well as commercial development and avoid over prioritising commercial agricultural development to the neglect of the dominant smallholder agricultural systems.

While agriculture has been heavily impacted by changes in population growth and distribution over the past century, rural and agricultural development can play an important role in helping alleviate some of the challenges associated with the changing population trends in the Pacific. At the forefront of many of these challenges is the need to change social perceptions of rural lifestyles which could be encouraged through institutions, government policy, educational frameworks and industry. Addressing migration and employment trends for youth is a challenge facing many PICs, with the poor perceptions of rural lifestyle contributing to the migration of youth from rural to urban centres where many struggle to

⁶ See Niazi (2004) who looks at the trickledown effect of the Green Revolution in Pakistan.

find appropriate work (Goldin, 2015). While changing perceptions on rural opportunities is a start, there also needs to be an increased focus on improving rural opportunities for a better life, and while non-farm rural development may not be a complete solution, its role in diversifying household income cannot be ignored (Hazell et al., 2010). On and off-farm rural development together offer great potential for improving the wellbeing of rural communities when the development focus is connected to the local needs and context (Bezemer & Headey, 2008; Hazell et al., 2010). However, there are contentions over the direction of agricultural development in many LICs as theories of economies of scale are challenged through real world examples of subsistence and small holder economies can be just as beneficial (Hazell et al., 2010). Therefore, in navigating the agricultural development path, it will be just as important to understand the local scale economies and benefits as much as the implications of larger economies of scale.

2.6 Pacific Education

One of the key components of agricultural development in the Pacific, and globally, is education. Contemporary education throughout the Pacific has many challenges. Indigenous education systems were colonised and post-colonial nations are often criticised for not representing the needs and context of indigenous peoples (McCarter & Gavin, 2011; Nabobo-Baba, 2013; Sanga, Thaman, & Parekereke, 2009; Thaman, 2003). The Pacific itself is a broad and diverse region which includes a raft of different cultures, political structures, languages, geographic differences and economic differences. This brings a broad range of educational needs and challenges. Coxon and Munce (2008) outline a changing educational environment throughout the Pacific and the need to address the lack of improvement in Pacific education outcomes despite decades of effort being put into Pacific education. They highlight the 'youth problem' where large numbers of 15-24 year olds throughout the Pacific are either unemployed or underemployed as a 'time bomb', that has been relatively ignored in past Pacific education agendas. Access to basic education due to geographic remoteness and the struggles around retaining students are issues also examined as well as the reality that many children are unable to stay in the formal primary education system and are not achieving the numeracy and literacy levels expected from education projects (Coxon & Munce, 2008). This has been an ongoing challenge for Pacific education systems in meeting Millennium Development Goals (MDGs) in education and will likely continue to be a challenge for meeting the SDG targets on education.

Indigenous Pacific scholars have critiqued the appropriateness of dominant globalised education agendas, particularly in relation to educational language and curricula in meeting indigenous educational needs and context (McCormick, 2014). Many scholars such as Gegeo & Watson-Gegeo (2002), Lingam et al., (2014), McCormick (2014), Sanga et al., (2002) (2009), and Smith (2012), criticise the global education agenda used in the Pacific as over-prioritising Western-based subjects such as math and science and neglecting areas of more applied knowledge relevant to the Pacific context such as home economics and agriculture. Such critiques are also informed by poor perceptions of agricultural education and extension services which have also been criticised for focusing on classroom learning and commercial agricultural development (Lingam et al., 2014). Coxon & Munce (2008) and Gegeo (1998) both criticise the prioritisation of colonial languages in education systems suggesting that valuing local languages is an important part of addressing the local educational context. Gegeo (2002) goes as far as to suggest that past development practitioners in PNG used language as a way of confusing and misleading villagers through their use of technical vocabulary that villagers would not understand. These researchers help highlight the importance educational context plays in the Pacific in supporting learning in a form that encourages positive engagement with communities.

With high levels of unemployment and underemployment amongst 15-24 year olds in the Pacific, some feel there is a need to focus more attention on vocational and technical training to better equip youth for more industry focused employment opportunities (McCormick, 2014). However, one of the challenges of technical and vocational training programmes is that they can often focus on training for industries where there can be limited national capacity, focusing more on international capacity, such as in donor countries, requiring students to migrate overseas after completing their qualification. This is largely due to donor funded programmes such as the Australian Pacific Technical College (APTC) with campuses across the Pacific, which are designed to train Pacific students to help fill industry demand in donor countries themselves (Ware, 2013). However, this assumes that graduated students can/will migrate after completing their course which is not always the case. This is highlighted by Clemens et al., (2015) in regard to the APTC where less than three percent of trained graduates across its five Pacific campuses have migrated to Australia. In the Pacific, Agrawal (2013) also highlights a common problem in technical and vocational educational training (TVET) programmes is where poor connections with industry can result in graduates not being

adequately equipped with the necessary skills required within the industry they have trained for. However, despite these challenges, globally, TVET has played an important role in supporting many early school leavers down an alternative pathway into skilled employment.

2.7 Agricultural Extension Services

Extension services have been identified by many scholars and organisations (Anaeto et al., 2012; Christoplos, 2010; Lopokoityit, Onyango, Kibett, & Langat, 2012; OECD, 2015) as important components of agricultural and rural development with Anaeto et al, (2012, p. 185) suggesting ‘that no nation would have real growth in the agricultural sector without effective extension services’. Agricultural extension services encompass a wide range of activities with ‘extension’ being defined by the Food and Agriculture Organization of the United Nations (FAO) as ‘systems that should facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agri-business, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices’ (Christoplos, 2010, p. 3). Effective agricultural extension services will be critical to addressing climate change and food security issues globally as well for as reducing poverty and improving gender equality in LICs. However, it is believed that few extension service providers in LICs are adequately equipped or have the appropriately skilled staff to be able to achieve effective service delivery (Christoplos, 2010). Rural training centres (RTCs) for example have been a commonly used extension service that offers a non-formal training pathway that can help youth develop better life skills and improve rural job prospects (Bennell, 2007). However, they have been criticised for their cost effectiveness, often having poorly qualified teachers, not being in touch with local labour market demands and often having inconsistent assessment standards (Tikly, 2013).

In many LICs, the criticisms of Technical Vocational Education and Training (TVET) programmes, such as RTCs, have been jumped upon as a reason to redirect resources away from such programmes, with funds generally being reallocated into formal education (Tikly, 2013). One of the main issues affecting the success of many extension services is inadequate resourcing and training of teachers (Anaeto et al., 2012; Coxon & Munce, 2008; Fleming, K., 2015; Greer Consulting Services, 2008; Meena, Singh, & Swanson, 2015; Vermeulen & Campbell, 2015). Due to the limited resourcing of agricultural education and extension services (including TVET) through the global education agenda, many LICs have been limited

in their ability to address major issues such as food security, climate change, youth unemployment and urbanisation (Anaeto et al., 2012; Vermeulen & Campbell, 2015). For many extensions service providers in LICs, there are constant challenges around securing stable funding, maintaining adequate training and skills development of staff, adapting to supply and demand changes, connecting with other services and addressing the needs of the different age, gender and ethnic groups (Christoplos, 2010). The lack of community input into project design and implementation is an area that has also been criticised in many agricultural extension projects. Meena et al., (2015) highlights a lack of farmer involvement in the planning of extension programmes as well as an orientation towards supply⁷, rather than market-driven⁸ training and a lack of emphasis on the training of farmers, as three constraints that have limited the effectiveness of extension services in India over past decades.

As well as weaknesses, there are many examples of strengths and successes with Farmer Field Schools (FFS) having great success for pest control management in Asia and Local Agricultural Research Committees (LARCs) demonstrating great potential in community-based participatory agricultural research in South America (Thiele, Braun, & Gandarillas, 2004). FFS work as a community (Adekunle & Fatunbi, 2012)-run, agricultural classroom, where members of the wider community meet at a designated place within that community, to discuss and work through agricultural issues and challenges with the support of a trained facilitator who then trains selected members of the community to take over project facilitation. LARCs work in a similar way to FFS in that trained facilitators support rural communities to undertake research trials within that rural community, to solve problems that the community has identified for themselves. Anaeto et al., (2012) draw on the importance of extension officers in helping Nigerian farmers take up new technologies which otherwise would likely be shunned by communities and highlights the importance of supplying good training and skills development to those officers. Similarities in successful extension programmes can also be explored and drawn on with FFS and LARCs both harnessing the knowledge of the participants and treating them as the experts, both using participatory approaches and relying on the communities to take responsibility for the ongoing running of these services. Both FFS and LARCs, along with the Nigerian extension officers, are successes

⁷ Supply refers to the establishment of training systems and courses around existing resources such as teachers, buildings, and property.

⁸ Market-driven refers training systems that respond to the trends in workforce demand to help meet industry capacity and needs.

where projects are taken to the communities rather than expecting participants to head outside their communities (Thiele et al., 2004). The impact these successes have had on communities can be significant with concepts often being taken up in other regions such as East Africa where FFS have reportedly improved participant's household incomes by 61 percent (Davis et al., 2012, p. 402). The capacity for these projects to be adapted to different contexts is another key aspect of their success.

While Vanuatu has been active in providing extension services over the past 50 years, very little scholarly research has been published looking at Vanuatu's extension. Grey literature suggests that agricultural extension services in Vanuatu had their golden age in the 1980s and early 1990s, with several large donors helping to fund agricultural development in Vanuatu (Cardno, 2014). However, the past two decades have seen a dramatic decrease in agricultural funding and a drop in government agricultural services staffing levels (Vanuatu Ministry of Agriculture Livestock Forestry Fisheries and Biosecurity, 2014). A review of Vanuatu's agricultural extension services in 2007 noted that:

'[T]he picture that is gained from meeting with and discussing extension services with senior staff and field agents of the four departments...is that the current operation of the extension services are under-resourced and ineffectual with extension staff constrained by a lack of capacity, transport, insufficient operational funds to carry out their work programme, under-motivated and with weak supervision and management' (Greer Consulting Services, 2008, p. 15).

While some of the past inefficiencies within extension services can be attributed to a lack of funding and resources, the report also highlights weak institutions and poor governance throughout the public service sector as a major contributor to weak performance. Part of the reason for this report, commissioned by the New Zealand Ministry of Foreign Affairs and Trade (MFAT), was to identify how best for MFAT to move forward in supporting Vanuatu's agricultural and rural development. However, challenges remain, with a MFAT commissioned report submitted in 2014 finding that agricultural support over previous years had 'not been as substantial [as intended] and tended to be more ad hoc' indicating that agricultural development is still likely being plagued by inefficiencies (Cardno, 2014, p. 7).

2.8 Climate Change

Climate change is predicted to impact on food production throughout the Pacific. There is a growing need for villagers to be equipped with the skills and resources required to help reduce the impacts of climate change as well as improving the resilience of national food security through effective rural development (NIWA National Climate Centre, 2016; Rodríguez-Pose & Hardy, 2015). Despite the 2015 Paris Agreement on climate change outlining a commitment to limit global temperature rise to 1.5°C above pre-industrial levels, it is still unclear if this goal is even possible given the current global temperature rise of .87°C (Hansen, Sato, Ruedy, Schmidt, & Lo, 2016). This is of particular concern for the Pacific as, according to the Fourth Assessment Report by the International Panel on Climate Change, small islands including those in the South Pacific are identified as one of four 'regions' that will likely be most impacted by climate change with the other three being; the Arctic, Africa, and the Asian mega deltas (NIWA National Climate Centre, 2016). Even outside these regions, it will still be the poor that are most vulnerable to the impacts of climate change. For this reason, I focus here on the predicted implications of climate change for PICs, which in themselves are far from uniform, with low-lying island nations struggling for national survival while the larger Melanesian islands needing to manage food security, population growth and urbanisation.

With Pacific Island nations being spread out over a vast area of the Pacific Ocean, the importation of foods tends to be costly and food consumption tends to be based on seasonal production (Hughes & Lawrence, 2005). Most PICs experience just two defined seasonal changes throughout the year; a hotter and more humid, wet season from November through till May and a cooler dry season from May through till November. However, increasing global temperatures are expected to amplify these existing seasonal variations with greater risks of droughts in the dry season and flooding in the wet season (Barnett, 2011; Park, Raitzer, Samson, & Halili, 2015). Maximum daily temperatures and rainfall are also expected to significantly increase where 'Bobonaro (Timor-Leste) would be the warmest, with the temperature reaching 44°C by 2070' and in Fiji 'maximum rainfall will increase from 160 to 200 millimetres per day by 2070' (Park et al., 2015, p. 209). Sea level rise is expected to vary across the Pacific with the high range estimates predicting 'all Pacific island countries but Kiribati could face a sea-level rise exceeding 1.0m, from 1.2m in Cook Islands to 1.7m in

Solomon Islands; low-range estimates suggest that sea-level rise to range from 0.5m to 1.1m for [the Cook Islands and Solomon Islands,] respectively' (Park et al., 2015, p. 209).

Geography will also play a role in the impacts of climate change and the ability of countries to adapt. While small islands will likely be impacted most severely by climate change, the larger Melanesian Islands which contain around 85% of the total South Pacific population will be not be exempt from these impacts (Haberkorn, 2008). As with the smaller island nations, most Melanesian countries have also undergone a dramatic shift towards coastal urbanisation in the past half century, however as Melanesian countries tend to be more mountainous, there is a greater ability for people to move inland as an adaption measure and escape rising sea level and storm surge in times of intense storm events (Connell, 2011). For the larger Melanesian islands such as the eight main islands in Vanuatu, the greatest challenges will be in managing and adapting to the environmental effects of climate change such as changes in seasonal conditions, erosion and coral bleaching. For example, in a study looking at ni-Vanuatu perspectives of climate change, concerns over the environmental impacts of climate change were of greatest concern to respondents, over that of the social, cultural and economic impacts (Davis, 2015). In Davis's research, 73.9 percent of research participants said that they had already noticed changes attributable to climate change, with 44.8% and 35.4% describing noticeable changes to the sea and weather patterns respectively, suggesting that climate change is already affecting the lives of people in Vanuatu (p. 58-60).

With growing populations to look after and the possibility of increasing internal migration from smaller islands, managing land resources and food production will be a growing challenge for many of the larger Melanesian Islands. These challenges will only be made more difficult by the predicted impacts of climate change. For many communities, success in managing these challenges will be directly enhanced by the knowledge and resources that they have access to. Making sure the connections between communities and resources are operating effectively and that communities have access to the right information will be critical in managing the challenges to come.

2.9 Food Security

The uneven production and distribution of food across the globe has allowed Western counties to maintain a significantly higher level of access to food over LICs for many decades. Due to lower average household incomes, LICs are often forced to rely on national food production to a higher level than HICs to meet their nutritional needs. This often means that

food security is directly tied to a household's ability to grow and produce enough food or tradeable resources, for which agricultural education is a big part of, to continually meet their dietary needs. Food security is defined as a situation 'when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary and food preferences for an active and healthy life' (FAO, 2016).

In the Pacific, food security is of growing concern as increasing numbers migrate to urban centres, leaving behind the ability to maintain a subsistence lifestyle. With urbanisation, climate change, and unemployment all putting growing pressure on household food security, the need to improve national and household agricultural capacity has only increased. This is not only important for improving the quantity of food production, but often more importantly, for improving the ability of households to meet the nutritional requirements of a healthy diet. Across the Pacific, access to cheap imported products has given many communities access to foods that support a more nutritionally balanced diet, like canned meats for protein (Hughes & Lawrence, 2005). Communities that have access to imported foods but still rely predominantly on local production tend to have a higher level of food security than communities that have little access to imported foods and communities that have a high reliance on imported foods (Allen, 2015; McGregor, Bourke, Manley, Tubuna, & Deo, 2009). This indicates the importance for communities and households to have the skills and knowledge to be able grow both the quantity and quality of food required to meet their nutritional dietary requirements, while also maintaining a level of income that allows them to purchase food in times of need such as over drought periods or after major cyclones (Allen, 2015; Campbell, 2015).

Although these imported products can offer improved food security through opening access to foods to make up a more nutritionally balanced diet and their availability in times of need, a high reliance on them can increase people's vulnerability to fluctuations in food prices. With many of those living in urban centres no longer producing much of their own food, instead relying more on buying their food, they can become more susceptible to changes in commodity prices as demonstrated by the 2008 and 2011 spikes in global commodity prices (Dethier & Effenberger, 2012; McGregor et al., 2009). While many islanders living in urban centres still maintain strong connections to their ancestral village, there is a growing number of second and third generation city dwellers that have had little or no interaction with their village and would find it difficult to return and be openly accepted in times of need (Campbell,

2015; Connell, 2011). This affects food security as village connections often act as a social safety net in which those living away can return and get access to land, food, and shelter. This reinforces the need to not only improve agricultural services but also work towards reversing the negative perceptions around agriculture and encouraging and supporting youth to stay and work on farms could both reduce the food demands of urban areas and increase potential food production.

While improved food security is an important part of agricultural development in many LICs, it is important to recognise that a community's level of food security is positioned on a spectrum. As a community moves along that spectrum towards greater food security, it is important that the benefits of greater food security are weighed up with the costs under different approaches, both short and long term. The role of education and extension services in agricultural development is not just about increasing food production and quality, but also to educate communities on the implications of different agricultural decisions or pathways. The decisions around time costs, financial costs, effort required, environmental effects, risks, and benefits of different agricultural development activities, must be weighed up. Therefore, agricultural education and extension services play a crucial role in empowering communities to make the best decisions for themselves. Lessons learned from the Green Revolution illustrate the negative environmental effects of intensifying agricultural production without adequately considering the environmental consequences (Singh, 2000). Already changing land use to coconuts plantations in some areas of Vanuatu is putting pressure on some village's food production (Allen, 2015). This is partly due to the traditional, low-intensity, farming system becoming compressed as land availability changes and intensity increased. To adapt to the reductions in land availability, fallow times have been reduced and intensification has increased pressure on the environment. There are growing concerns that if fallow times continue to be reduced and production intensity continues to increase, nutrient levels in the soil will deplete, reducing the sustainability of food production in these areas into the future (Allen, 2015). Balancing the growth in agricultural expansion and intensity with the environmental and social impacts of intensive agriculture will become a balancing act for both national governments and donor organisations

Some of the areas in which agricultural development resources can play an important role in climate change adaption are crop development and education. Research indicates that climate change is expected to have negative impacts on food production in the Pacific where

‘the largest potential yield losses are projected for sweet potato in PNG and Solomon Islands, with losses in excess of 50% of yield for the former by 2050 under the medium emissions scenario’(Park et al., 2015, p. 213). Significant reductions in sugar cane, maize, and cassava are also expected across the Pacific by 2070 (Park et al., 2015). However, research by Park et al., (2015) using ‘optimal variety choice’ modelling, also identified the potential for increasing gains in crop yields for certain varieties of Pacific staple food crops when planting times were modified for optimum production under climate change scenarios. A big component of achieving that potential would rely on engagement with growers to modify existing planting cycles.

The potential of crop research and education is not limited to food production. It also has the potential to support the growth of new export industries that offer greater income generation to rural communities. This could improve revenue from island exports, allow a greater level of foreign currency to flow into that country, improve country wealth and improve revenue streams for rural farmers. While many PICs currently export bulk commodities such as copra or sugar cane, Morgan (2013) suggests that there are growing opportunities amongst PICs to focus on niche, low production but high-value products such as kava, vanilla, fair trade cacao and coffee, and certain nuts and timber for which some PICs have a competitive advantage. This would support food security through supporting rural economic development, improving regional and national economics and diversifying income generation within rural households and improving household income.

2.10 Conclusion

Throughout this chapter, I have explored challenges and potential benefits of agricultural development in both the global and Vanuatu contexts. The literature indicates a strong relationship between agriculture and poverty alleviation, suggesting that agricultural development is critical for reducing global and regional poverty. However, agricultural development has not been an aid priority over the past three decades leading to reductions in aid funding for agricultural development projects and limited overall success in improving rural livelihoods (Dethier & Effenberger, 2012). With increasing political recognition of agriculture’s importance within the development sphere, the need to understand agricultural development challenges is important (Dethier & Effenberger, 2012). One such challenge is changing the negative perceptions around agriculture as a career opportunity within LICs. Urban-bias institutional neglect of rural opportunities, especially amongst youth, has

supported growing negative perceptions of agriculture (Connell, 2011). However, there is little research that explores the relationships between communities and agricultural education resources from the community perspective for which this research has aimed to do.

Youth make up around 40 percent of global unemployment and high youth unemployment can often lead to increased crime, substance abuse, domestic violence and civil unrest (White, 2012). Agricultural development has the potential to contribute to addressing these challenges through absorbing labour (both skilled and unskilled), slowing the rate of urbanisation and reducing pressures on existing densely populated urban centres. However, recognising the best pathways for agricultural development is complex. Many approaches have significant limitations and some can even have negative impacts such as new technologies reducing labour demand. It is for this reason that some research suggests smaller farm units can be just as efficient if not more so than large commercial farms in some LICs (Hazell et al., 2010). Despite this, there is global pressure on many LICs to improve export potential by expanding their commercial agricultural sector and moving away from the predominance of subsistence agriculture. While this may offer the potential for greater household income, there is little research that explores communities' perspectives of agricultural development. Greater understanding of villagers' perspectives can offer a better understanding of how to approach agricultural development in Vanuatu and other Pacific Islands.

Whatever approach a LIC takes within agricultural development, education and extension services are likely to have a critical role to play. However, criticisms have been made of colonial approaches to education that may be inappropriate for communities in the Pacific. Balancing each country's individual cultural values, needs and context with global educational agendas and resources is an ongoing challenge (Coxon & Munce, 2008). The ability of education and development to address local needs will likely only get more important as the effects of climate change begin to have a greater impact on PICs. While the Pacific region is expected to be one of the worst affected by climate change, the impacts and challenges will be diverse across the region (NIWA National Climate Centre, 2016). Food security, sustainability, environmental management, adaption and resilience will all need to be incorporated into future development plans. It is highly likely that research, education and training will be essential to supporting and equipping rural communities to confront these

future challenges. With that in mind, if global leaders are truly committed to achieving the new 2015 SDGs and meeting their obligations through the 2015 Paris Agreement on Climate Change, the literature suggests that a greater emphasis on addressing agricultural and rural development will be required. These multiple challenges have informed my decision to investigate the potential for improved engagement between rural agricultural communities and agricultural education and extension resources, and to do so from the grassroots perspective of the rural villagers themselves.

3 Research Methodology

3.1 Introduction

The seed of this research topic was first planted in my consciousness over the course of my 10 month volunteer assignment in Vanuatu in 2012. What I saw in Vanuatu's institutional agricultural development programmes at that stage were instructional failings and a system that was not reaching its development potential. I began to think about the seed in my head as a grown tree that would be a resource for agriculture growth and change. It wasn't until the first year of my postgraduate study, where I took two Pacific research and education based papers that I really started to understand how my own cultural and agricultural background was leading me to make assumptions on things I knew too little about. I was inferring agricultural ideas for an agricultural system far removed from the agricultural system I knew in New Zealand and assuming I could direct positive change for people with such different values, context and cultural beliefs. It was here that I stopped thinking of this seed of possibility as a grown tree and began to focus on the process of growth and nurturing of my own understanding. Over that year my thesis topic morphed and changed regularly, so too did my mindfulness of how my past experiences were affecting my perceptions. My thesis is the result of this process of reflection and change and is about going back to the start in search of a better and more informed understanding of the ni-Vanuatu context around agricultural education and extension resources.

This chapter explores how my research exploring rural ni-Vanuatu perspectives on agricultural education and extension services was undertaken, both in a physical sense as well as in the conceptual sense. I use this chapter to explore some of the literature around my chosen research methodology, looking at contentions within indigenous research and around the use of indigenous methodologies. In discussing my own methodology, I draw on literature that adds context to the research methods I have chosen and explores the implications of these methods for the research. Although much of what I have done is not new, there are few examples of indigenous methodologies being used in an agricultural context and I feel much could be gained from a more diverse use of indigenous research methodologies within agriculture in the Pacific.

3.2 Approaches to Research with Indigenous Peoples

Western approaches to research with indigenous peoples have received heavy criticism from indigenous researchers over the past three decades, especially in regard to the recognition of epistemological and ontological foundations. Indigenous researchers such as Konai Helu Thaman (2003), Linda Tuhiwai Smith (1999), Kabini Sanga (Sanga et al., 2009) and Renee Pualani Louis (2007) have been vocal in their criticisms of Western-centric approaches to indigenous research that dominated the research paradigm over most of the 20th century. They argue that research involving indigenous peoples of the Pacific has often been undertaken with little recognition of underlying assumptions that come from a Western, privileged and/or highly educated background. This has been of particular concern in qualitative research where Pacific scholars have often criticised academic researchers for their lack of recognition of indigenous epistemologies, traditions, cultures and beliefs (Firth, 2003; Smith, 2004; Thaman, 2003). Many indigenous scholars argue that past indigenous research undertaken through Western institutions has ignored and discredited indigenous beliefs meaning historical accounts have often lacked the indigenous perspective on historical events and on highly significant subjects such as colonisation, education and the environment (Louis, 2007; Nabobo-Baba, 2011; Smith, L. T., 1999; Thaman, 2003).

Out of such criticisms have emerged new indigenous methodologies and frameworks that have aimed at decolonising research undertaken with indigenous people, better recognising indigenous ontology, epistemology, beliefs and values, and connecting the process of research to indigenous concepts and practices. Globally significant work around indigenous research methodologies has been undertaken in New Zealand in relation to indigenous Māori by Graham Hingangaroa Smith (1992, 1997), Linda Tuhiwai Smith (1999) and others. Smith (1999) highlights how many Māori have become disenfranchised by research from decades of Western-based approaches objectifying Māori and denying the validity of Māori knowledge. In order to overcome negative Māori perceptions of research, Smith (1999) had to first convince Māori that research can have importance and benefit for Māori people and she emphasised the need for greater numbers of Māori researchers. In addition, building on work by Smith. G (1992,1997), Smith. L (1999) worked to develop and formalise the Kaupapa Māori research framework for undertaking research and education within the Māori sphere. What separated this framework from Western-centric research frameworks was that it embodied cultural hierarchies, practices, epistemologies, and environments throughout the

whole research process (Smith, G. H., 2012; Smith, L. T., 1999). The framework identifies eight guiding principles to be embodied within Māori education and research that are based directly on principles within Māori culture (Rangahau, 2016). Drawing from Smith and others I have tried to base my own research methodology around what I know of ni-Vanuatu epistemologies, culture, relationships, and practices in order to shape my own research paradigm while remaining aware of my own positionality as a white Western researcher working in rural Vanuatu.

3.3 Epistemology and Paradigm.

Although I find it difficult to articulate a single epistemological position, my epistemological stance is most in line with constructivism, which recognises 'that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context' (Crotty, 1998, p. 42). Even in hard science, I am reminded of an undergraduate professor saying in a lecture that 'there are no facts in science, only probabilities'. As constructivism recognises that there is not one true reality, it allows a researcher to engage with others in a manner that recognises the 'truth' of individual and cultural perspectives that may be different from that of the researcher without defining one's perspective as right or wrong.

I recognise that my own epistemology will shape my research paradigm. As such, I have chosen to adopt an indigenous paradigm at least as far as this is possible for a non-indigenous researcher. A research paradigm as defined by Wilson (2001) is 'a set of beliefs about the world and about gaining knowledge that goes together to guide your actions as to how you're going to go about doing your research' (p. 175). Wilson (2001) sets an indigenous paradigm apart from a Western-based paradigm through the recognition that indigenous knowledge is not individualistic as it is not just between the researchers and researched but is connected to all creation, nature and the cosmos (p. 175-176). In this regard, I feel constructivism can align with an indigenous paradigm through focusing on the relationships between researcher and researched and the environment within which knowledge is shared and acquired in order to best understand participants 'truths' and express these truths through their research.

The question that must be asked of my research, however, is the extent to which a non-indigenous researcher can truly understand and therefore represent an indigenous paradigm?

While there is no simple answer to this question, I find the ideas of Scheyvens, Scheyvens & Murray (2003) useful in suggesting that outsider-insider notions are better understood as a 'sliding scale'. These experiences of being a volunteer, speaking Bislama and adopting indigenous methodologies help me move along the scale from complete outsider towards becoming an insider. I also feel that my position on this sliding scale benefited my research in that my previous experiences in Vanuatu helped demonstrate to villagers that I had a real desire to support ni-Vanuatu communities.

While being an outsider can have restrictive consequences, it can also have supportive beneficial responses. I feel that due to being an educated European New Zealander, villagers felt that my research offered a greater chance of getting their perspectives recognised by their government and through agricultural development programmes than would usually happen if a ni-Vanuatu had undertaken the research. While these events cannot change my positionality from an outsider to that of an insider, I concur with Weber-Pillwax (1999) who argues that whether indigenous or non-indigenous, it is the researchers understanding of the customs, beliefs and values of the people involved in the research and the researchers ability to recognise and understand the underpinning epistemological foundations of the indigenous community, that defines the research relationship. To this end I have drawn on the understanding of the ni-Vanuatu people that I developed over my time in Vanuatu in 2012 where I had regular but limited engagement with rural communities and locals through agricultural events, sport, religion, social discussions over kava, and participating in traditional events such as a wedding. However, I do not propose that I know Vanuatu culture in depth and recognise there are limitations of my own knowledge in regard to using an indigenous methodology.

3.4 Indigenous Research Methodology

Our epistemology helps define our research methodology through underpinning our theoretical beliefs of the world around us and how we relate to it. However, our epistemology also influences our emotional connection to the research which can be as important as the theoretical reasoning. For social constructivism, it is the social interactions that give meaning to the world around us, as Wilson (2001, p. 177) puts it: '[i]t is not necessarily an object that is important, it is my relationship with that object that becomes important...that ideas and concepts, like objects, are not as important as my relationship to an idea or concept'. Because emotion plays a big part in our relationship to the world around us, our emotions shape our

research methodology. With a Pacific indigenous methodology, the researcher's relationship to the research also becomes a fundamental part of the research itself. Many indigenous research methodologies also require an emotional connection or reasoning behind the research process itself (Wilson, 2001; Woods, Macklin, & Lewis, 2016). A big part of the emotional connections I have to this research are rooted in the connections I developed in Vanuatu in 2012 and my desire to support agricultural development in Vanuatu. My time in Vanuatu in 2012 left an imprint on my soul that has become a strong part of who I am as a person. It is this connect I feel to Vanuatu that also underpins the strong emotional connections I have to this research.

Emotion also effects our relationships, judgment, and perceptions of moral responsibility which are major ethical components of qualitative research. Within the ni-Vanuatu culture, it is important to recognise the relationships around knowledge. Knowledge is connected through person, place, and time. For example, when the son of a chief talks to people in his village the value and merit that fellow villagers put on what he says would likely be high, however, the worth of his knowledge and merit of what he says would change when he steps outside of that village. Recognising and understanding my own status and positionality within each community was an important part of the relationship building. My status in each community created both limitations and expectations and effected how other villagers engaged with me. In one village, I was quickly and warmly welcomed as a member of the well-respected family for which I was living with. However, as a member of that family I was also expected take part in certain events and be involved in certain activities. In another community, my agricultural experience meant I was the status similar to that of an agricultural advisor and was expected to help them with all their agricultural problems. As a researcher, it was important that my research methodology allowed me to adapt and change to each community and to evolve within each community.

Using indigenous research methodologies can have a significant impact on the validity and depth of information attained through research because it tends to be based on strong relationships and research environments that encourage open engagement. Prescott (2011) used talanoa, a Polynesian based research method and methodology based around a culturally appropriate Polynesian form of semi-formal open discussion, as a research method for collecting qualitative data from Tongan entrepreneurs. Prescott (2011) found that through using talanoa, historical aspects of individual Tongan businesses could be collected that would

otherwise not have been recognised and information collected tended to be more contextualised. A similar methodology to talanoa is the 'faafaletui' introduced by Tamasese, Peteru, Waldegrave, & Bush (2005) in that it is a culturally sensitive methodology for use in Samoan research and uses semi-structured discussion to weave together ideas and perspectives. Tamasese, et al. (2005) identified that through using the faafaletui methodology, there was an 'extraordinarily high level of cooperation by the participants' and that the depth of knowledge shared suggested a high level of acceptance of this research methodology (p. 306). However, both talanoa and faafaletui are Polynesian based concepts and would need to be adapted to the Melanesian context before use in Vanuatu.

Another key aspect of indigenous research is creating a research environment in which participants feel relaxed and as safe as possible in order to encourage participants to feel comfortable about the research experience. This not only includes the physical site of research, which is important, but also the social environment and atmosphere over the course of the research process, which can be affected through language, dress, seating arrangement and timing of the research (Kovach, 2015). Kovach (2015) also discusses how vocabulary and language used in research can impact on how research participants engage in the research project, and identifies that indigenous participants can sometimes struggle to express ideas and concepts in a language that is not their own or be discouraged through the use of technical research vocabulary. The role the natural environment can play in affecting research is highlighted by Vaioleti (2006) who identifies how undertaking research in environments that maintain strong connections to nature, a building with no walls, thatched roof and surrounded by bush as opposed to a building with concrete walls, iron roof and a few windows for example, can help to reduce power disparities which tend to favour Western knowledge and beliefs. Recognising culturally appropriate environments in which different forms of research can be undertaken as well as environments that may affect the perceptions of power becomes an important component of using an indigenous methodology as it reflects the importance of identifying intrinsic expressions of power in order to reduce their effect on the research. In all three communities involved in my research, participants chose an appropriate place for the research discussions which are describe in more detail later on.

3.5 Location

I chose to undertake my research on the Island of Santo because it is the largest island in Vanuatu, it has the largest amount of farmed agricultural land of any island in Vanuatu, and

because VAC and VARTC are both situated on Santo. It is also where I spent my 10 months working with agriculture through VSA in 2012. Santo also offers a diverse range of agricultural environments with the west coast of Santo and parts of the north being isolated and very much dominated by subsistence agriculture; the south being predominantly subsistence agriculture but with some semi-commercial, and commercial agriculture, and the east coast having high levels of commercial and semi-commercial agriculture. This not only offered diverse forms of agriculture but also a glimpse at the impacts of different degrees of agricultural development on communities and the environment, with the east and south coasts having higher levels of agricultural development. Access to the main town of Luganville is an influencing factor in the level of rural development around Santo with a tar sealed road along the east coast allowing improved access to agricultural markets for most of those living on the east coast. With this in mind, I attempted to incorporate these different rural environments into my research by staying in one community in the south, one in the east and one in the north of Santo.

My aim was to spend two weeks living in a village from each of the three different communities in order to build up a relationship with research participants, better understand my research context, and make observations around community engagement with agriculture. However, due to challenges faced in the field, time spent in communities ranged from 11 days to 14 days as further discussed in section 3.10. In choosing appropriate villages, I knew that there were limitations to identifying individual villages from New Zealand and, in order to fit with my indigenous methodology, I felt face to face engagement with people was a more appropriate pathway into villages. With that in mind, while keeping within the chosen regions of Santo, I allowed the process of choosing each research village to be an organic process based around relationship building and networking.

My first research community was in the south where I stayed in the village of Fimele, situated about one hour's drive from Luganville along the bumpy South Coast Road and surrounded by bush and coconut plantations. Fimele village has a population of around 200 inhabitants with another 80 or so situated in small satellite communities close by. While most families had a coconut plantation as a source of income, the main food production was through subsistence agriculture with excess production being sold at the Luganville market. The second research community was the village of Lorum situated around one hour north of Luganville along the tar sealed East Coast Road. Lorum has a population of around 70 people

but has strong connections with neighbouring communities with villagers moving between villages for church and to help each other with crop harvesting and copra. While many residents of Lorum still rely on subsistence agriculture, there are multiple semi-commercial and smallholder families in the community as well as a couple of households that have no form of agricultural production, relying on non-farm income sources for daily needs. Many families also grow food crops specifically to sell at local and Luganville markets. The third research village was the village of Nawalala in the north of Santo. Nawalala is about one hour up the East Coast Road and two and a half hours inland via a rough and bumpy dirt road on a four wheel drive track. While being relatively remote, the Big Bay region (see Figure 5) is a large producer of kava and there is regular transport to Luganville. The Nawalala village has a population of around 200 and, while most households are based around subsistence agriculture, there are many that have semi-commercial kava plantations. There is also one family in the nearby village of Whitegrass that is engaged in commercial agricultural production.

2015b; Vanuatu Government, 2016b). I allowed three months to undertake my research so that I had plenty of time to build the necessary relationships and obtain access to villages. This proved very useful as at one stage plans with a village fell through and I had to find an alternative village to work with.

At each village I planned to stay around two weeks, however, I was only able to stay the full two weeks in Fimele village, staying 13 days in Lorum village and 11 days in Nawalala village due to my contact not turning up and plans being changed by a villager. In Fimele village where I stayed the full two weeks, I felt the two weeks was a good amount of time as it allowed me to introduce myself to the community before getting actively involved in community activities such as sport, copra harvesting, working in the gardens and at church. In Lorum village, I arrived on a Sunday and was only able to attend church with the community once during my stay, but although I feel attending a second time would have helped build a stronger relationship with the community, I had been very active in the community and helped multiple villagers harvest their copra over the course of my stay, which I feel supported a strong research relationship with participants. In Nawalala village however, I only stayed 11 days due to delays from my village contact, and on top of this, I spent four of those days removed from the community, helping out my village family on a family member's farm and was unable to attend church with the community at all. I feel this affected my research as I feel my presence at the local church in Fimele and Lorum had really supported my acceptance into the community which I feel I did not achieve to the same level in Nawalala. In Fimele and Lorum, the church had been a place where I was formally introduced to the community with an atmosphere supportive of friendly conversation. Out of the three villages, Nawalala was the one I felt gave the least depth of information and had the lowest level of engagement through the research process, demonstrating the importance of time in building up a strong foundational relationship before undertaking the research.

3.7 Methods

3.7.1 Storian

The central research method I used was storian which is based around the concept of talanoa in Polynesian research. Storian is the Bislama word for 'to chat, yarn, tell stories' as cited by Warrick (2009, p. 83) and refers to a semi-structured/ informal discussion. Warrick (2009) found the use of storian as a research tool to be an effective way of allowing participants to address concerns and issues in their own way and one that offered a comfortable, relaxed

platform for engagement. Warrick (2009) also identified the influence of talanoa in using storian as a research tool. While talanoa's potential through research has been recognised since at least 1975 by Crocombe (1975) as cited by Vaioleti (2006, p. 25), it has grown in use in the past couple of decades through the work of Pacific researchers such as Timote Vaioleti, Setsuo Otsuka and Unaisi Nabobo-Baba, who have really advanced the discussion around culturally appropriate research methods (Vaioleti, 2006). Vaioleti (2006, p. 23) describes talanoa as 'a conversation, a talk, an exchange of ideas or thinking, whether formal or informal'. One of the fundamental concepts of talanoa is that there is no formal structure to the conversation and participants are free to direct the discussion where they feel, drawing on stories and information from different topics and times to help contribute to context (Vaioleti, 2006). Mo'ale 'Otunuku (2011, p. 47-50) identifies ten principles which underpin talanoa as a research tool: relationship, equality, confidentiality, meaningful engagement, cultural competency, autonomy, respect, freedom to disagree, no boundaries for discussion, and reciprocity. I adopted these principles in using storian with slight differences in the protocol of the sessions.

In each village, I arranged a storian session with between six and eight members of the community with no restrictions on gender. However, as Vanuatu still has strong gender roles ingrained within its culture, I was disappointed but not surprised to find women only took part in one storian session. I feel greater representation of women's perspectives throughout all storian sessions would have improved the depth of perspectives I was able to record. This was indicated by the greater depth and scope of discussion in Lorum storian session in which women were participants. In two villages, participants chose to hold the storian session in the village nakamal (traditional meeting house and a place for community discussion), while the other group chose to undertake the storian outside under a mango tree. Although I already knew all the participants involved in each storian from my time staying in the community, I started each storian session by introducing myself and my translator to the group with both of us giving a little background about ourselves. Unlike talanoa (Vaioleti, 2006), this does not need to be ancestral history and family line but should include some connection to place (Vanuatu, island, community). Then I explained the context of my research followed by asking for their permission to use the knowledge they shared with me in my thesis and going through the consent process before starting the storian session. I started each storian session by discussion and asking a question on a subject identified over the period of my village stay.

That initial subject was not necessarily directly connected to my research but something that I thought would be a comfortable subject to start with. No time limit was put on storian sessions, and each session was between 1 hour and 1.5 hours long and recorded on a digital voice recorder. While storian sessions followed no set structure or format, I did have a list of questions that I used as a check list for myself to monitor what information the storian sessions had covered in relation to my research questions⁹. After each storian session, I thanked all participants, turned off the recorder and reflected on the storian with participants and took notes on their feedback.

3.7.2 Relationship building and participant observation

Developing a strong relationship between myself and my research communities was an important component of my research methodology and reflected other Pacific indigenous research methods such as talanoa and faafaletui (Tamasese et al., 2005; Vaiolleti, 2006). The use of a Pacific indigenous methodology, drawing on culturally appropriate research methods such as storian, relationship building, cultural appropriate discussion sites, and use of the local language was used in this research to foster an environment of trust, openness and friendship that underpinned the research process. At the core of this was how I engaged with communities. In entering communities, I did not want to just walk into a community and ask to stay with them and undertake my research with their community. This would be me directly imposing myself on them and would not be conducive to supporting a caring, friendly relationship based on equality and respect. I would also likely be aligning myself with the more negative outsider-insider experiences that community members might have had. I felt there needed to be a process of introduction to each village chief through another community member, as it is through other community members that visitors are traditionally introduced before being welcomed. For each community, I had a different community contact who carried with them a different status in their community. Through this experience I was able to observe how the status of each individual affected my relationship to the community as a whole.

In the first village, my contact was a relation of the village chief, whose status meant that I was very warmly welcomed and accepted. In the third village, while being respected, my contact had a degree of separation from the community which I feel affected the initial

⁹ See Appendix A: Personal question check-list for storian sessions

relationship building process. However, in order to introduce myself to individual community members (as contacts), I had to first find appropriate contacts, and I did this by approaching a local organisation TEKS (Traditional Entertainment and Kastom Support) that regularly works with rural communities across Vanuatu. TEKS is based in Luganville and became a crucial source of advice and support for my research as well as introducing me to a capable translator. TEKS then introduced me to a member of my first research village who was able to arrange a family for me to stay with and introduce me to the village chief. In Vanuatu, the village Chief is the gatekeeper who has authority over who from outside the community may stay and who may not, as well as what visitors may do while they are in the community. At every village I required permission from the chief to stay in the community and to undertake my research.

Another component of relationship building was through staying with each community for at least a week and a half where I observed agricultural practices and undertook informal discussions before undertaking my dialogue-based research. This time was invaluable, and I spent it immersing myself in village life and observing the village context of my research. I ate only local food, attended church with my village family, played football with local youth, worked in the gardens and copra plantations, making sure I worked as hard as the other villages worked, and tried to demonstrate that I didn't expect to be treated differently because I was white. I sense that this was the biggest contributor to my acceptance in the communities. This time also help me understand the environment in which much of Vanuatu's agricultural development is expected to take place, and the communities' comfort in the status quo. It was clear that almost all villagers had been successfully engaging in semi-subsistence agriculture for generations and were content in their way of life. However, it was also clear that the community lifestyle was becoming more challenging with the costs of school fees, a growing use of imported goods and a greater incorporation into the formal monetary system. This was also an important part of helping me understand local perceptions towards myself. Locals often explained how past researchers had generally brought their own food with them and kept their distance from village life. It became clear that some negative perceptions towards Western researchers had formed amongst some communities which made me grateful that, despite these perceptions, they allowed me the chance to undertake my research.

3.7.3 Language

Language plays an important part in shaping power dynamics between researchers and research participants. Language can be empowering or disempowering, inclusive or exclusive, and supportive or isolating (Zhang & Guttormsen, 2016). Language does not only play a critical role in the direct collection of research but also play a crucial part in influencing the research process such in arranging interviews and discussions, recruiting participants and gaining access to information (Zhang & Guttormsen, 2016). Vanuatu has the highest number of languages per capita than any other country in the world with around 135 languages for around 285,000 people (Lynch & Crowley, 2001; Vanuatu National Statistics Office, 2016). Of these, there are three main languages: Bislama, English and French. Of these three languages, Bislama is the official national language and is spoken throughout the archipelago. In rural villages, Bislama is the main non-local (not that community's traditional language) language spoken and is taught to most children at an early age. From my time in Vanuatu in 2012 I was able to develop a reasonable competency in Bislama and therefore used it as my main language of communication while staying in the villages. Bislama was also the spoken language for all storian sessions. Using Bislama as the language of my research, and being proficient in Bislama, helped build stronger relationships with communities and research participants as it demonstrated respect for their way of life and allowed me to better break down some of the insider-outsider barriers.

Although my competence in Bislama is reasonable, for validity purposes I also hired a translator to come out to each village towards the end of each of my village stays and help facilitate and translate in storian sessions. My translator was a ni-Vanuatu male in his early thirties from the island of Ambae who had completed high school but then chosen to work on cruise ships for four years. He had perfect English and was fluent in Bislama as well as two different village languages. I found that in two of the three villages my translator was also able to connect to community members through family and schooling connections which helped support his acceptance as a facilitator in storian sessions. My translator was also an invaluable source of feedback and guidance contributing to the evolution of the research process through suggestions for better ways to guide the storian sessions, explaining cultural nuances, and improving my overall understanding of social and cultural process like how west to introduce myself.

Voice recordings were transcribed into Bislama first and then into English. The recording of my first storian session was transcribed by a qualified ni-Vanuatu transcriber. However, I had not anticipated the cost of having a qualified transcriber undertake the work and could not afford to have all my storian sessions professionally transcribed. So, for the following two storian sessions I employed my translator to transcribe the recordings for me. This also allowed me to maintain a high level of accuracy and validity through using someone with a high level of cultural understanding and ability while working within the financial parameters of my research budget.

3.8 Ethics

3.8.1 Institutional Ethics

Research ethics can often be split into two categories with some overlap. Institutional ethics covers the formal ethical process required by institutions and overseen by institutional ethics committees. Part of undertaking this research required that I obtain ethical approval through the Victoria University of Wellington Human Ethics Committee¹⁰. The process of obtaining ethics approval required me to create both information¹¹ and consent¹² documents translated into Bislama and clearly outlining the rights of research participants and responsibilities of myself as a researcher. Because some participants had a low level of literacy, both the information sheets and consent form were read out to participants and discussed with individuals to ensure that informed consent was obtained. Both transcribers were also required to sign a confidentiality form¹³. This process helped me understand the importance of professionally respecting the ownership of information and people's rights to control over that information. Also, while I recognise the importance of the process, I feel that the formality of undertaking the formal process of obtaining informed consent through the consent forms just before conducting the storian sessions, impeded on the initial, informal atmosphere which I was hoping to encourage through my use of storian. In the future, I would like to find a way to obtain informed consent in a way that is more conducive to the environment I am trying to encourage.

¹⁰ Appendix B: Human Ethics approval Memorandum

¹¹ Appendix C: English and Bislama project information sheets

¹² Appendix D: English and Bislama participant consent forms

¹³ Appendix E: Transcriber Confidentiality agreement

As well as institutional ethics through the Victoria University of Wellington, I also had to obtain research permission from the Vanuatu Cultural Council¹⁴ which also outlined stringent ethical guidelines for all research undertaken within Vanuatu. While this process is reasonably straight forward, it did have its challenges. I arrived in Vanuatu to pay for, and pick up, my research permit, only to find that the person that had granted permission for my permit, no longer worked for the Vanuatu Cultural Council, and there was no record of my application on file. Fortunately, I had access to prior correspondence with the previous employee who granted my permit, and after a couple of hours of talking to different people within the Vanuatu Cultural Centre, I was able to pick up my permit (at a significantly higher price than firstly anticipated) just in time to make my connecting flight to Santo.

3.8.2 Reflexivity and Positionality

The second form of ethics is what I refer to as applied ethics and relates to the situational decision-making that researchers must often undertake. These are often situations that cannot be fully pre-determined and must be navigated through one's own moral compass, understanding and critical reflection. Two concepts that play a big role in that ethical decision making are positionality and reflexivity. Positionality refers to how a researcher has come to hold a particular position within their research and how that position can impact on the research process. As Bourke (2014, p.1) puts it

‘Identities come into play via our perceptions, not only of others but of the ways in which we expect others will perceive us. Our own biases shape the research process, serving as checkpoints along the way. Through recognition of our biases, we presume to gain insights into how we might approach a research setting, members of particular groups, and how we might seek to engage with participants’ (p. 1).

Throughout the research process, I identified many aspects of my positionality, including being an educated male New Zealand European, my agricultural background and my previous experience in Vanuatu that could all have an impact on how I related to villagers and how they related to me. To try to reduce the impacts of my positionalities, I kept very mindful of how I engaged with and spoke to villagers, trying to make sure I never spoke over top of them, did not attempt to advise them in any way especially around agricultural development and tried to keep as open as possible to all new ideas, concepts, and beliefs. I also made sure I

¹⁴ Appendix F: Vanuatu Cultural Centre research approval letter

actively listened and absorbed what villagers said. One area of positionality I was especially aware of was who I stayed with in between village stays as I knew that in Vanuatu, where power disparities between expatriates and ni-Vanuatu are still evident and racism is prevalent, who I stayed with and associated with would impact how other ni-Vanuatu perceived and related to me inside the rural communities as well as outside of them. With this in mind, when a European Vanuatu farming friend offered for me to stay with him and his family, I first consulted with TEKS as well as other ni-Vanuatu friends about this person's reputation within the ni-Vanuatu community and the impact staying with this family might have on my research. Once I was assured that staying with my friend would not negatively impact my research, I moved into my friend's sleep out.

Positionality is something that is not fixed and is constantly in motion as relationships and new experiences affect our perceptions and people's perceptions of us (Bourke, 2014). Because of this, the process of reflexivity was required throughout the research process. Drawing from Bourke (2014) again, reflexivity is a critical reflection of one's self as a researcher and the relationships between the researcher and research. It is 'a continuing mode of self-analysis' (p. 2). Throughout my research, reflexivity was a process which I was constantly undertaking. I often discussed my reflections with community members, my translator and people at TEKS to help better guide my understanding of my positionality. A good example of this was a passionate discussion I had with the head of TEKS (Dally) about the relationship between Europeans and ni-Vanuatu and how this relationship had been represented through the research process. Dally had indicated that past community research undertaken by Europeans had dominantly been undertaken from the stand point of the researcher being separate to the researched. Researchers tended to bring a Western standard of living into village communities, being their own food and sleeping equipment, sometimes solar showers. How researchers generally engaged with research communities in Dally's experience had also been more confined to the research scope. This conversation helped me understand some of the ni-Vanuatu perspectives towards the research process which may shape their positionality towards me. In all three villages my positionality was slightly different and evolved differently as the status of the village family I stayed with affected how quickly people welcomed me and included me. I also feel that activities that I engaged in like harvesting copra and planting kava affected their positionality as it allowed them to separate their understanding of myself from Europeans that they had engaged with

at a different time. Because of the changing nature of positionalities, I was constantly undertaking a critical assessment of myself, my research, and relationship approach to better understand how my experiences were impacting me and my research. This was because my understanding of the ni-Vanuatu way of life and how I engage with it evolved with each village experience. With each village stay I picked up new skills and perspectives that changed how I related to villagers.

My first village stay especially had a dramatic impact on my positionality as the openness of the community to welcome me as a member of the family and community completely changed my understanding of the relationships that I was forming through my research. While I had hoped to be warmly welcomed by the community and build a bond with my host family, the emotional connects that form through being embraced as a member of the family and community in such a way as I was, really indent themselves on one's identity. It was also in this village that I began to understand the challenges of managing my positionality where, in my second week at the village, I noticed a child with a large infected boil on his arm. As I was carrying a well-stocked first aid kit, I offered to put some iodine on this child's arm and dress it, which the child was very grateful for. However, the next day four people approached me with medical issues wanting me to give them something and I quickly realised that I was not going to be able to provide treatment for all without using the supplies that I might need later. While on the one hand, I wanted to be accepted as part of a community where ownership and possession are more of a communal concept, I also knew that I had to maintain a degree of independence as a researcher.

3.9 Analysis

I decided to use qualitative data analysis software (QDAS) for analysing my research. I chose to use NVivo as it is readily available at Victoria University of Wellington and has been found to be an effective tool for sorting and coding smaller data sets for analysis (Sotiriadou, Brouwers, & Le, 2014). Data analysis was undertaken using NVivo 10 to help identify and connect perspectives across the three villages. Through NVivo, I was able to manually identify and group individual ideas and perspectives so that I could discern the regularity in which key topics such as individual education resources, agricultural challenges and modes of engagement, were mentioned. From here I was then able to categorise perspectives into multiple different groups (nodes) to identify positive, negative, and neutral perspectives, perspectives addressing the past, present and future, and scale different perspectives (village,

region or island). NVivo also records how many sources contribute to each node which helped highlight where similar perspectives were shared amongst villagers. However, while I have used NVivo to help identify and compare these trends, I have relied on the re-presenting of participant's perspectives through direct quotes to try to keep interpretation as close to the actual word as possible.

3.10 Limitations

Research always has its limitations, and for this research the main limitations revolved around the time constraints of a masters, language, cultural and financial limitations, along with the limitations around my own personal research and facilitation skills. While I would have liked to use the unique local languages for my storian, the feasibility of this in regards to the time and cost of translating and transcribing, as well as the availability of translators did not make this possible, so all my storian discussions were undertaken in Bislama. This has limitations in relation to my adoption of indigenous methodology, as using indigenous languages can contribute to increased depth of knowledge and improved engagement from indigenous participants (Kovach, 2015). I also feel that the lack of female participants affected the depth of information I was able to obtain, as female participants have the potential to offer a different perspective to that of male participants. In addition, in the one storian session where female participants were present, they were more vocal with their perspectives which I feel improved the engagement of the whole group.

Due to the time restraints of a masters, my research was only undertaken in three different villages on Santo which is not a large sample of the Santo population, or necessarily representative of other islands in Vanuatu, and therefore there are limitations as to how much of this research can be used to infer relationships in the broader Vanuatu context. While I feel I achieved subject saturation within each storian session, I feel I did not achieve this through my sample population, and that given the time to include more villages in my research, new issues could have likely been highlighted.

Lastly, my own research experience was a limitation to the quality of this work, and while I am happy with how I have undertaken my research, on reflection, there is much that I can improve on in any future research. This was made especially evident through tutoring after returning from my field research, where as part of being a tutor I undertook a short tutoring and facilitation course. Reflecting on the skills I learnt through this course and put into practice over the following 12 weeks of tutoring; I was able to recognise how I could have

used those skills, such as appropriate ice breakers, to better facilitate my storian sessions had I had that tutoring experience before undertaking my field research. Drawing from this experience, I feel in the future, I will be more competent in my facilitation skills and be better equipped with the skills to undertake storian sessions in a more effective way.

4 Village Perception of agricultural education resources

4.1 Introduction

The island of Espiritu Santo (Santo) is around 4,248 square kilometres and is home to Mt Tabwemasana, Vanuatu's highest point at 1,877 meters above sea level. It is estimated to have a population around 48,000 with around 70 percent of the population living in rural areas with varying degrees of remoteness from agricultural and development resources (Vanuatu National Statistics Office, 2009; Weightman, 1989). While some 76 percent of households in Vanuatu own a mobile phone and live in areas with mobile phone reception, I found that the transfer of agricultural knowledge and advice is still very much a face to face activity (Vandeputte-Tavo, 2013).

This research set out to explore and understand, from a community point of view, the different ways rural ni-Vanuatu villagers engage with agricultural education and extension resources, what effects engagement, and what aspects around agricultural development do villagers want to see improved. In seeking to understand this topic from a villager's perspective, this research hopes to highlight engagement challenges from an often overlooked point of view. Through my observations and research discussions, I have been able to identify multiple ways in which this face to face engagement currently takes place and has taken place in the past. Using the information gathered through research observations, informal discussions and the storian sessions, this chapter firstly looks at the key findings around the different modes and perspectives of engagement. After covering these perspectives, I highlight some of the agricultural challenges identified through this research before exploring villager's perspectives for improved engagement in the future.

4.2 Modes of engagement

Face to face engagement, usually where one member of the community finds out some new information and shares information with selected members of their community or another community, was the dominant way in which agricultural information is shared. However, face to face engagement occurs in different ways. I broke these forms of face to face engagements into three categories through which communities tend to acquire advice and information from agricultural education and extension services;

- Information shared through first-hand engagement with the resources themselves (visits to VAC, VARTC and DARD).

- Information shared through engagement in villages (workshops or research projects).
- Information shared through intermediate people (students and other villagers).

Of these three categories of engagement, I found that the third category, information exchange through intermediate people, was the most common form of engagement by which agricultural information was passed to rural villagers. For example, in the first village, I observed that one of the key agricultural influences was from an ex-VAC student who had returned and had put his knowledge into practice, creating three water gardens where he was growing fish alongside taro and rice crops. This concept had then been taken up by multiple other village members with the fish providing a valuable source of protein for the households. Another example which I observed was through a French student's post-graduate permaculture research project that was being supported through VARTC and had been undertaken in a village in the same region as Nawalala village. I observed that villagers from the neighbouring village had shared some of the information and knowledge they had acquired through the project with villagers at Nawalala village and Whitegrass village¹⁵.

However, information is not always openly shared, and in many instances, information is kept within the family as a form of exerting power and influence. Because of this, while face to face engagement with a third person is the most common form of knowledge transfer, this engagement is still fairly minimal and most returning VAC students are perceived to contribute little to the community. One storian participant said '[I]ots of people have been to school and returned, but of all the ones who've been, only a few do any development, and it's only with their families' (Fimele storian), while another participant said '[i]t's like this, they get out of school and come back and just do nothing. They don't apply for a job. They don't do anything such as going to study something and then coming back and giving out information here, suggesting that we do what was learnt' (Fimele storian). The reality that knowledge shared through a third person was the dominant form of information transfer seems to imply a lack of direct engagement between rural communities and agricultural education and extension resources, rather than strong internal knowledge sharing within rural communities.

Although I identified information shared through a third person as the most common form of knowledge transfer from agricultural education and extension programmes, the most

¹⁵ Whitegrass was a neighbouring village to Nawalala village and situated about 600 metres away.

discussed form of engagement was direct face to face engagement undertaken in the village. This was largely due to the high regard for field assistants which were around prior to 1994 and discussions around workshops. Field assistants¹⁶ were the most mentioned topic across all storian sessions with many of the elder participants mentioning the benefits of their proximity to villages and the ease of being able to meet them:

‘You know, you might have a good idea to start something if you have the aid of a field assistant, he’s [available] because he goes out and stays near the villages, talks to the people and knows their problems. If someone wants to talk to an officer from the Department of Agriculture and Rural Development (DARD) or VARTC, he doesn’t have to get a transport into town, knowing that, having a field assistant is a good thing and is a lot easier’ (Lorum storian).

The past use of field assistants was talked about positively with some participants remembering different situations when field assistants helped them with advice and technical support such as a participant from Lorum who remembered using a field assistant to set up and plant a new coconut plantation;

‘The field assistant and I went together to IRHO, then to the Agriculture department in town getting information that was when we bought coconut seedlings and have the coconut plantation back there. The field assistant keeps coming back to check on the coconuts until they had bear their first fruits, then he left us’ (Lorum Storian).

However, the use of field assistants finished around 1994 after government cuts to the civil service sector and villagers felt that since the loss of their local field assistant, knowledge exchange and engagement had dropped away with villagers identifying little community-based engagement since. What community-based engagement had occurred had generally been as workshops run by non-governmental organisations (NGOs) such as Zero Vatu¹⁷, Oxfam, and Save the Children. Workshops were rare, however, and they were discussed with

¹⁶ Field assistants were employees of the Department of Agriculture (DoAg) in the 1980s and early 1990s. They lived in rural areas and acted as agricultural representatives and advisors that could work with rural communities to support agricultural development. The employment of field assistants was dramatically reduced and eventually stopped after the 1994 change of government as mentioned in Chapter 2.

¹⁷ Zero Vatu or officially known as Zero Vatu Self Reliance Local Development (ZVSRLD) is a new NGO working across Vanuatu to promote sustainable, grass roots, semi-subsistence, agricultural development within rural communities.

mixed feelings. Participants from the first village felt past workshops had not been very effective at informing or helping the village with one villager explaining:

‘The climate change people came once, but they didn’t mention different kinds of crops or what we could plant during the drought. They just came and said there would be a drought, we should be ready, but they didn’t even touch on agriculture or food or whatever. They just warned us that we should prepare, but they didn’t mention any crops that we could plant during the drought or anything we should do with the animals here’ (Fimele storian).

In the third village, however, participants mentioned the effectiveness of a recent workshop by Zero Vatu in engaging and informing the community, with one participant mentioning ‘when Zero Vatu made their awareness, many people were moved by what they heard and something that I learnt from that awareness is ‘do not make a debt for yourself in the future’’ (Nawalala storian).

As well as workshops, rural training centres (RTCs), which are rural based training centres that offer community courses targeted at early school leavers, have also been a source of information in past years. However, many villagers mentioned that most of the RTCs have moved away from agricultural training and now focus on tourism and carpentry. I did, however, pass one agriculturally focused RTC while travelling back to Luganville from Nawalala via the village of Manantas but as there were no agriculturally based RTCs close to my research villages, I was unable to explore their engagement with villagers.

What also came through the storian sessions in regard to engagement was that while almost all participants wanted more face to face engagement with agricultural resources, most villagers felt that it was important for people to come to them in the village in order to facilitate this engagement, or at least start it off. There was a clear lack of motivation from villagers to take a pro-active approach and seek out agricultural advice themselves. Most participants supported a return of field assistants while increased workshops were also suggested in one village. In the absence of field assistants, two of the three storian groups suggested that people from resources such as VARTC, VAC and DARD should come out to the villages more regularly to inform and update villagers about how each resource can support village agricultural development. As a participant in the Fimele storian said, ‘we think it would be better if, not all the time but sometimes, they could come and hold awareness sessions

with us so that we could get some of the information' (Fimele storian). This was echoed in Lorum: 'I think it's good for them [agricultural resource] to come to the village and talk to us, explaining about what they are producing there, so that then the farmers in the village can know and then they can go get information from them to use'(Lorum storian).

While face to face engagement was clearly the most supported form of engagement by villagers, I also observed that some informative material in the form of posters had also been acquired by some villagers. One villager in Fimele village had a Department of Agriculture poster in his room displaying different garden vegetables that could be grown with basic information on how to plant them. I am also aware of past information pamphlets that had been created and used by VARTC in the past. However, none of the villagers knew about these pamphlets but thought they would be a good idea and effective for informing communities.

As well as being a source of advice for communities, many of the agricultural resources also supply additional services such as research, product development (at VARTC) and market development (through DARD). My research identified that while villagers had little understanding of the breadth of research undertaken at VARTC, many were aware that they could purchase superior coconut seedlings from VARTC which multiple participants across the three villages had previously done at varying stages in the past. It became clear that the coconut production aspect of VARTC was the most recognised aspect of VARTC's services and few participants had realised the diversity of products and research that VARTC provided. Through the storian sessions and general discussion, two participants from different villages also mentioned examples of where DARD had worked with villagers to grow produce for a new market project. However, both examples revealed failures in establishing a sufficient market to absorb production, leaving villagers with excess product and nowhere to sell it:

'The last time we [work with DARD] was when we created a group to make a project to plant kumara back there and joined them in creating an association. Their responsibility was to go look for a market for kumara, vegetables, and other root crops. The association was known as the Sanma Root Crop Key Vegetable Farmers Club. We only made the first sales for the first harvest, the second one they did not have a market for us and so we had a huge quantity of root crops but no markets. They had told us they'd be responsible for finding markets for our products, but they did not do

this. That is why farmers grow their gardens just for consumption and give up hopes for planting bigger quantities' (Lorum storian).

Both the two examples of the promotion of production for a new market that I was made aware of had been initiated through DARD but neither matured into anything. This had created a reluctance towards future collaborations with DARD.

4.3 Perceptions around Engagement

What villagers think about individual resources evidently has an impact on the level of engagement villagers have with those resources as well as the status that villagers give to the information obtained through various forms of engagement with resources. Through all three storian sessions, there was a higher level of discussion around the negative aspects of resources than positive aspects, with VARTC, VAC and DARD all being mentioned twice as often in connection to a negative perception as a positive perception. Negative perceptions were connected to a range of issues including access, language, engagement, cost and reliability. Costs associated with resource access and engagement were the most discussed issues amongst all three communities with transport costs being mentioned most frequently as a barrier to engagement with VARTC and DARD. The fees cost for students attending VAC was the most mentioned barrier to families sending family members to study agriculture at VAC. However, one of the compounding factors affecting VAC enrolment suggested through this research is perceptions on the relevance and usefulness of VAC training:

'But one thing that makes it irrelevant to the village is that many of the things they teach require machinery to do a lot of the work. For example, tractors. But for us who use manpower, it's not very relevant because we only work with the tools that we buy in the shops, not machinery' (Fimele storian);

'Life is too easy out here in the village that any idea of going back to school is a waste of time... [w]hy should I go back to school when life is good out here' (Nawalala storian).

Villagers felt that VAC offered little training targeted at improving village agriculture with courses being one, two and three years long and being targeted at training for larger commercial scale agriculture. One idea suggested by a participant to improve VAC use and support village agricultural development was for VAC to offer short courses targeting aspects of village agriculture:

‘[N]ow for people who use or work the soil, gone for two weeks is ok because you’ve gone to gain something in particular that would benefit not only you but your community as well. Now what we don’t need, is those one to three year courses that when you finish you’d be able to manage farms and all that, because we don’t need it here. We only need to take care and make better our little gardens at home’ (Nawalala storian).

Short courses and village-based agricultural training had previously been an area supported through rural training centres (RTCs) in Vanuatu. However, when discussing RTCs, villagers and research participants said that the training focus of many RTCs had moved away from agriculture and now focused on tourism and carpentry. This means that for the large majority of rural villages across Santo, there are no obvious or recognised providers of agricultural training and support at the village agriculture level.

Another cost which was mentioned in regard to VARTC and DARD was the transport cost for villages to get to and from these resources in order to talk to someone. Transport costs vary from village to village depending on how far out of Luganville they are and ranged from 500 to 1500 vatu each way. For many villagers, 1000 vatu would be the amount they would be paid for a day’s work, and when most rural villagers have very limited disposable income, this is a high cost for most villagers. On top of this, even if villagers were to pay the transport cost to go seek advice from someone at VARTC or the DARD, it was not guaranteed that someone would be present to help them:

‘I’ll just give you my view of the department [DARD], and after that, they can tell you theirs. I’ve been maybe two or three times, and I went for nothing. Because when you go, and the officer responsible for root crops is out, then you pay for transport for nothing, you go and wait, and wait, and then in the afternoon you come back. Then next time you want to go, if he’s in the office it’s good, but if he’s out again, then again you’ve paid for transport for nothing again’ (Fimele storian)

‘At times we follow transports into town and go to the Agriculture Department offices. Sometimes when we do arrive there, that’s when we find out that the officers are not in. When this happens two to three times of going and no one’s there, that’s when people give up all hopes because of travelling expenses’ (Lorum storian).

These two factors combined have clearly had an impact on discouraging villagers from proactive engagement with VARTC and DARD.

While there was considerable scepticism about the value of agricultural education and extension services and how much VAC students actually contributed to agricultural development in rural communities, villagers still recognised that these resources offer potential value: '[t]he resources [VARTC] provides are always good, they're helpful for farmers' (Fimele storian); '[w]hat I think of, is that [VARTC] is a place where they know a lot of different ways and techniques to grow something' (Nawalala storian). Across all three storian sessions, individual participants commented on the potential benefits they felt resources could have for communities, especially around supporting youth to get into agriculture: 'that [Agricultural College] would help us by training mostly our youths that they would come back and work' (Lorum storian). While many participants had little understanding of what services VARTC and DARD offered, those that had a higher level of understanding all felt that they are good resources to have and could contribute to improving village agriculture. Of all the positive comments connected to resources, the most common was associated with the credibility and potential of the information these resources provide, with one participant suggesting:

'Personally I think they should come around and give talks or awareness to us so we can know the importance of such places. If anyone in the village will say it, no one will believe it, but if they come from the research centres or the departments, then people will believe it.' (Nawalala storian).

While there were fewer expressions of positive perceptions for resources than negative expressions, the positive perceptions expressed through storian sessions indicated that many villagers recognise a degree of potential for resources to benefit communities.

4.4 Challenges for Village Agriculture

One of the areas in which agricultural education and extension services could support village agricultural development is through addressing challenges that villages face and are likely to face in their everyday lives. This research identified a range of challenges, with some challenges being mentioned in one village only while other challenges were mentioned by all three villages. At the individual village level, one area of concern mentioned by one of the

villages was youth engagement in agriculture. Many youths perceive agriculture as a fall back option and are quick to leave village life to go live in urban areas:

‘Looking at young boys in the village now there’s none. They’ve all gone to schools and they only come around during school holidays. Once they completed their studies, they only think of living in town and finding jobs there. Agriculture is their second option, if they can’t find a job then they’ll come back and work the ground. If they do find a job then agriculture is forgotten of. It just the elders who are turning the soil now, whereas the younger folks are thinking of working in town, probably because they don’t sweat’ (Lorum storian).

One interesting aspect of this concern was that Lorum, where this was mentioned, is the least remote out of the three villages and has the easiest access to Luganville as it is situated along the sealed East Coast Road.

One of the issues affecting youth engagement and perceptions of agriculture is the lack of stable markets that villagers can enter and make a good living from. As mentioned previously, market-based projects with DARD and the communities this research engaged with have not had good success. However, one participant felt that:

‘Again if [students] came home and their focus was still on agriculture, there wouldn’t be a market [for them] and whatever that they do would not be commercial but for consumption, just like their fathers and their fathers before them. If there’s a market that opens with a good opportunity for a lot of money, then they’ll forget their other options and focus on agriculture’ (Lorum storian).

The lack of larger commercial markets in which villagers can sell produce too means that most villagers mainly sell excess production at local and Luganville markets. However, with these local markets, villagers have little knowledge about how many other people will be selling what they are selling, and many villagers mentioned that it is common to have to transport lots back because they couldn’t sell it all: ‘[t]hings like kumara, if you go to the markets, people of South Santo have that as well . . . cabbage, other places like Fanafo and South Santo also plant that, and so there’s always big probability for you to come home with leftover’ (Lorum storian). Having to transport unsold production back from markets adds cost to what is already a costly exercise for many villagers who usually come away with around 5000 vatu profit after staying at the market for three days (sleeping under tables at night). In order to

help sell all their production, most villagers will now keep all the poor-quality garden production for their own consumption and sell all the better quality production:

‘Firstly, our elder said, it used to be that our gardens are really big during their days. Yam gardens were huge, but now gardens are smaller. During their days, they have lots of food, and now it’s less food. When you are selecting for the market, you select the best, and you are left with the leftovers or smaller bits and pieces’ (Lorum storian).

However, despite markets being a huge investment in time, energy, and money, they are often one of the few sources of household income for many rural families in Vanuatu and the greatest proportion of that household income usually goes towards paying school fees for their children.

Another area in which agricultural education and extension services can help within rural villages is diet and nutrition. Mineral deficiencies, diabetes, and obesity are growing issues in Vanuatu with many rural households consuming high levels of rice and sugars and little red meat (Dancause et al., 2011). Breakfast in the villages over the time I was staying there was often a cup of tea with about three tablespoons of sugar in it and some breakfast crackers. In two of the three villages, lunch and dinner were predominantly a large portion of rice with a few green vegetables and sometimes some chicken or fish. In the third, more remote village, however, lunches and dinners were based on garden production and little rice was eaten. When discussing diet with villagers, few really understood the benefits of good nutrition especially in connection to children and learning. Many understood that rice could contribute to diabetes and that it would be better to eat more meat, but little work had been undertaken with villagers from any of the three communities about growing a wide range of foods that could help them meet their dietary needs. I was struck by the limited range of plants that make up their daily diet and the reliance on island cabbage as their only green vegetable in many situations. While the traditional ni-Vanuatu diet has sustained rural communities for hundreds, if not thousands, of years; with such a high reliance on only a few different staple plants varieties, there appeared to be a need for better nutritional education and support within rural communities and a broader range of possible crops to reduce the vulnerability to climate change impacts.

With rural communities being heavily reliant on the environment around them for food and resources, it was not surprising that villagers identified climate change as both a growing

concern and a current challenge. Across all three villages, villagers mentioned and discussed concerns about climate change, including how they felt it was affecting their current lives and questions about how it will affect them in the future. Participants in all three villages felt that weather patterns and temperatures had changed over past years with one participant mentioning:

‘we do not know or hear many stories about climate change, but the only things that we know is the very strong heat that we now get from the sun or at times the heavy rains . . . and then like he’s talking about the pests in the gardens and fires . . . [n]ow the periods and timings of the wet, cold, dry and hot months have also changed so that’s how far we can go to’ (Lorum storian)

Changes in the weather was the main concern villagers identified through the research with warmer than usual weather affecting staple crops such as yam, taro, and kumara. One participant in Fimele, identified how these changes had impacted on the local diet:

‘Climate change is destroying some plants that we use for food. It’s damaging some kinds of yam, one of our staple crops is yam, and now they’re changing. Some kinds of cabbage are no longer growing, they’ve dried up... [n]ow, people just plant bananas [plantain] and not very much water taro. Some people want to switch to water taro, but because of the drought the streams and the little swampy patches in the coconut plantations have dried up’ (Fimele storian).

In Nawalala, an area with a thriving kava growing industry, the hot, prolonged dry season was clearly having an impact on kava production with newly planted shoots dying off from lack of water. One of the barriers to addressing climate change at the village level, however, has been the tendency of villagers to put their faith in traditional knowledge and ways, as discussed below. This has created challenges in the past with the sharing of knowledge with rural communities through workshops and educational projects. One villager mentioned an example where a climate change workshop was held at a village close by but few people attended it because many villagers felt they just didn’t need the information as is clear from the following:

Researcher: ‘Do you think you know the changes that climate change will bring in the future? Have you talked about it a bit or discussed climate change with anyone?’

Speaker one: 'Now, someone did come to talk about climate change but then no-one went.' Speaker two: 'Yes, we didn't go. None of us went.'

Researcher: 'Why did no one go?'

Speaker one: 'To answer your question about why no-one went, I'll tell you briefly. We thought we knew everything, we thought we knew everything, so when they announced it, we didn't go. We thought we knew everything; that's the reason why none of us went' (Fimele storian).

In the more remote village of Nawalala, villagers in the past had relied more on the use of traditional customary practices, such as witch doctors and weather diviners, for dealing with environmental issues. However, as the changing weather patterns have moved beyond the ability of these traditional practices, villagers have given greater recognition to scientific knowledge and understanding. This was expressed best through one villager who said:

'Well we used to hear people talking about climate change and for many, we don't believe in that term climate change because many people still do believe in witch doctors or a kleva [shaman] who could control the weather pattern. With this long dry spell, the witch doctors and kleva could do nothing to make it rain and so it really confirms it to us that the climate has really changed' (Nawalala storian)

These examples suggest that the understanding of how information is best shared in order for it to be best received is an important component in how educational projects are undertaken. It is clearly not enough to just pass information on but instead there need to be networks and relationships in place to help connect the information to communities in ways that best support community uptake. These networks and relationships will likely be an important resource for sharing climate change knowledge in the future.

4.5 Future Perspectives

Part of the motivation for this research is to help support improved engagement between rural villagers and agricultural resources, therefore, a key component is to explore the villager's perspectives on improving future engagement as there is little existing literature exploring agricultural development and engagement from the villagers' perspective. Exploring villagers' perspectives on what changes they feel would improve engagement in the future, limits the space to draw on assumptions, while also helping identify changes that villagers would be most responsive to. In all three storian sessions, villagers expressed a desire

to have a return of the field assistants as they felt this would make a big difference to engagement, '[i]f a field assistant was here, he would be the one who reinforced [students] learning' (Fimele storian). However, villagers had differing ideas about what qualities field assistants themselves should have. For example, there were mixed opinions as to whether age and where they are from would affect their credibility. Some villagers felt that it was important that a field assistant was from that region, while others felt that this would not matter as long as they are qualified:

Researcher: 'Is it really important or does it matter if your field assistant is from a nearby place or if he's from another island like Tanna or Ambae? Will the information given be taken more seriously if he's from a particular island or the same regardless of the island?'

Participant 1: 'Just the same regardless of the island of origin.'

Researcher: 'I was just asking because of the different cultures, maybe a stranger giving information in a new place wouldn't be taken seriously. A chief giving information would be of a very high value, and that is really to find out if this would have some impact here as well or it doesn't matter?'

Participant 1: 'No it doesn't really matter, it's alright. Anyone who comes is alright. Sometimes our own people wouldn't do it, only sleep.'

Participant 2: 'For a start, the field assistant should not make big things, using simple terms, get down to the people's level, talk in ways that people will understand him.'

Participant 3: 'It would be good if the field assistants would be like the ones we know, where they stayed and looked after a particular area. They wouldn't go and live in town. If a field assistant is based on the East coast of Santo, then that's where they should be/live' (Lorum storian).

Some thought that, again if they were qualified, age would not matter while others felt that an older male would be best which I would suggest is due to the social status of older males and their knowledge. I also believe that male villagers would likely feel that older males would relate to their situation better and have more experience in agriculture. The importance of going through the chief was also mentioned in regard to generating a good attendance at workshops: '... [workshops have] to come through the chief. If the chief is informed early on,

then he can organise for everyone to attend the workshop' (Nawalala storian). As well as field assistants, the research highlights the desire for villagers to have more in-village engagement with agricultural resources as well as more educational programmes focusing on village agriculture. Shorter, two-week courses through the agricultural college were mentioned as desirable as well as more workshops.

4.6 Summary of findings

These findings, summarised in Table 1 below, indicate that while there are education and extension resources established to help support agricultural development across Vanuatu, there is little two-way engagement between these resources. While this research is limited to the island of Santo, given that multiple key resources are situated on Santo, I feel there is a high probability that the engagement issues identified in this research would only be more prominent across the islands.

Table 1: Summary of the research findings

Summary of Findings	
Modes of engagement	<ul style="list-style-type: none"> • Three forms of engagement identified <ol style="list-style-type: none"> 1) Direct visits and engagement at resource location (visits to the resources themselves) 2) Direct engagement away from resource location (workshops and research projects) 3) Engagement through a third person (other villagers or researchers) • Third form of engagement was the most commonly occurring method of engagement (other villagers sharing information) • Second form of engagement was most talked about (field assistants and village workshops) • Few participants actually sought out the resources and travelled to visit them. • Engagement was often impaired due to lack of knowledge about resources and what they offer • Face to face engagement in the village was seen as the most desirable form of engagement • No current engagement through ICT
Perceptions around engagement	<ul style="list-style-type: none"> • Negative perceptions were mentioned more than positive perceptions • Negative perceptions were focused around: <ul style="list-style-type: none"> ○ high costs involved to access to resources, ○ use of technical language by resource personal, ○ level of village engagement from the resources, ○ resource reliability • Cost of transportation to resources is a significant barrier for villagers • Agricultural college courses seen as expensive and not suited to village context (length of courses and focus/curriculum) • Agricultural students often don't contribute much to village agriculture on return • Villagers who have participated in projects developing new agricultural markets have often been left worse off so are reluctant to participate in future projects • Little research from VARTC has been passed on to villagers and villagers know little about VARTC beyond its coconut development • Despite negative perceptions, villagers recognise that the resources offer good potential benefits for village agriculture • Villagers would like greater engagement
Challenges for village agriculture	<ul style="list-style-type: none"> • Youth not wanting to take up village life and agriculture • Villagers already feeling the effects of climate change <ul style="list-style-type: none"> ○ shifts in seasonal patterns, ○ some crops not growing well, ○ extended dry seasons • Need for stable and reliable markets

	<ul style="list-style-type: none"> • Need for growing crops for better food security (a more nutritionally balanced diet and adapting to climate change)
Future perspectives	<ul style="list-style-type: none"> • Desire for a return of field assistants • Need for greater engagement in villages (workshops, field assistants)

Villager's perceptions expressed through this research highlight a range of challenges, such as the cost of accessing resources, lack of in village engagement, climate change concerns and the relevance of information resources provide. However, they also indicate a lack of motivation and willingness on the villager's part to pro-actively seek out agricultural development resources and find out useful information for themselves. While this research gives a useful insight into some of the limitations of current agricultural education and extension resources, some challenges that were not adequately covered through the storian sessions, such as the use of information and communications technology (ICT), could have improved the depth of the research. While this research focuses heavily on challenges to be addressed between agricultural education and extension services and rural communities, there are also positives that can be drawn on as a foundation for developing more effective future engagement. At the core of this is a desire on the villager's part to have improved engagement with agricultural education and extension services but much needs to change in order to foster pro-active behaviour by the villagers and to change negative perceptions towards existing resources.

5 Exploring Agricultural Resources

5.1 Introduction

This chapter draws on the findings from this research to discuss and explore the factors that influence engagement between agricultural education, research and extension services and rural communities in Santo, Vanuatu. The research has explored villager perceptions on agricultural education and development resources in the attempt to answer three overarching questions around the effectiveness of engagement between rural ni-Vanuatu villagers and agricultural development resources. These three questions as introduced in Chapter 1 are:

1. How do rural ni-Vanuatu villagers engage with existing agricultural education resources on the Island of Santo?
2. What affects the utilisation of agricultural education resources by rural villagers on the Island of Santo?
3. What are some of the potential changes that could be made to better improve the engagement and effectiveness of agricultural education resources with rural villagers on the Island of Santo?

The methodology used in this research has also played an important part in answering these questions and therefore needs to be discussed in its own right. Therefore, before discussing the findings in relation to the research questions, I will first discuss my use of a Pacific indigenous research methodology in the Vanuatu and Melanesian research context.

5.2 Research Approach

Indigenous research methodologies are growing in use and in recognition. However, indigenous peoples and cultures are hugely different across the world and can vary greatly within a single country. Therefore, undertaking research through an indigenous methodology that truly recognises the individuality of each indigenous community becomes challenging in that there are extensive relationships and understandings that need to exist for this to be possible. Due to the limited availability of Vanuatu specific examples of indigenous research methods and a limited number of examples of Melanesian indigenous research methods, the research approach I have used has been to draw on the wider Pacific research context and to try and harmonise this with my own experiences as well as drawing on scholars such as Gegeo & Watson-Gegeo (2002) and Vallance (2007) for greater insight into the Melanesian context. I have aligned my research approach to that of a Pacific indigenous research methodology

but recognise this is a highly contestable action as I am not of Melanesian or even Pacific Island decent. However, as the creation and use of indigenous research methodologies is very much an evolving field, I hope my approach can contribute to its evolution through critique and discussion.

A big component of my research approach was the desire to build a relationship with the communities where I was staying. In all three villages, the community incorporated not just the village where I was staying but also satellite villages which tended to have strong connections with my village family through church and extended family. This relationship building was not just about spending time in the communities for me. It was about immersing myself in community life and being a contributing member of the community as much as the community would allow me to be for a short period of time. While this relationship building ultimately adds to the research approach, it is important that the relationship-building is genuine and not solely motivated by the research process.

How I immersed myself within the community impacted greatly on my acceptance as well as on the overall experience that I personally had. I ate when my village family ate, making sure to wait for the blessing of the food and eating only local food; I worked when there was work to be done, not just when my village family had work to be done but when there was work to be done in the wider community. This included helping harvest copra for different community members, planting kava and clearing bush for extended family, helping dry harvested kava and transport it to a warehouse and helping clear rubbish grass off the village football field. I also got involved in village recreation, playing football in the evenings, swimming at the river and hunting. I attended church and got involved in a youth group and I drank kava but never more than twice in one week, as while kava has strong roots in ni-Vanuatu village life, there are also strong negative perceptions associated with those who drink kava regularly. This immersion in village life, where, what villagers did I was happy to do as well, allowed me to build friendships more as equals and integrate better into the community as an outsider. These friendships continued throughout my time in Vanuatu where I would catch up with village friends when they came into Luganville. I also introduced my fiancé to friends and family in Lorum when she came over for two weeks and passed on things to my village friends that I no longer needed, including my first aid kit, when I left. We still keep in touch over Facebook I look forward to seeing them next time I am in Vanuatu.

Another aspect of my research approach was to allow myself to be guided by others once I arrived in Vanuatu and to let the research process naturally evolve. This played an especially important role in initially meeting members of different communities and gaining access to villagers. Before I left for Vanuatu, I was fortunate enough to be put in contact with a small ni-Vanuatu organisation in Luganville that works with traditional entertainment and kustom support (TEKS) across Vanuatu. Staff at TEKS were not only able to introduce me to members of different communities, they shared their community engagement experiences with me and guided me on the appropriate ways to integrate myself into the community environment. This knowledge, shared through TEKS staff demonstrated the importance of connecting with local organisations and networks. The people that TEKS staff introduced to me also significantly influenced my integration into rural communities. While each village in Vanuatu tends to have a chief who ultimately decides whether an outsider can stay in the village or not, how an outsider is introduced to the chief has a big impact on how they are welcomed within the community. I found being introduced to each village chief as a friend of another member of that community, greatly enhanced the acceptance awarded to me by the chief, and in turn, the community.

A second major component of my research approach was to base my research around relevant traditional practices such as storian, language and place. There is growing recognition within some academic disciplines that research and researchers need to better integrate themselves into indigenous communities and use culturally appropriate research methods (Nabobo-Baba, 2011; Suaalii-Sauni & Fulu-Aiolupotea, 2014; Thaman, 2003; Vaioleti, 2006). The use of surveys in Pacific research for example are critiqued by Vaioleti (2006) as not being in line with traditional Pacific approaches of sharing information. Vaioleti also suggests that many Pacific research participants can find surveys confusing but are embarrassed to ask for help. This was supported by comments made over my field research where some participants said that they felt less comfortable asking questions and discussing issues with surveys. This along with the overuse and lack of scope to add context to answers, has put off many Pacific Islanders from participating in research surveys (Vaioleti, 2006). Pacific cultures are more inclined to share knowledge and information through discussions where they can contribute context to their perspectives and request clarity if needed. This is where research methods such as storian and talanoa are more appropriate in that they are based around those traditional systems of knowledge sharing. This also extends to the spoken

language used in research which plays an important role in allowing participants to express their thoughts in a form that is most comfortable to them (Suaalii-Sauni & Fulu-Aiolupotea, 2014)

Reception to my use of storian as a research method was good and participants were genuinely supportive of storian being used as a research method. My competency in Bislama was also commented on along with the improvements I made over the duration of each village stay. Utilising my competency in Bislama, I made Bislama my primary language while living in the villages, and through the whole research process. Speaking Bislama as my primary language also helped demonstrate the respect I had for them and their culture. It also demonstrated that I did not expect them to adapt to me but for me to adapt to them. Having participants decide where storian sessions take place, also reinforced participant control over the research process and allowed storian sessions to be undertaken in the most appropriate place such as in the nakamal. While it is hard to validate the effect of each concept incorporated through my methodology, using the different research methods allowed my research to better draw out villager perceptions around my research topic. Recognising that it has been challenging to find examples where a similar combination of approaches has been taken in the Vanuatu context, especially in agricultural research, this research can build on other research examples such as participatory approaches (Cronin et al., 2004) or the use of storian (Warrick, 2009) to better support greater use of culturally appropriate research methods.

5.3 Agricultural Education

Formal agricultural education has been operating in Vanuatu since the 1960s with the Tagabe Agricultural School opening on the island of Efate in 1965 (Weightman, 1989). However, the continuity of formal agricultural education from 1965 through to the present has been poor with contested colonial governance impeding education and training prior to independence; with financial constraints accompanied by changes in political prioritisation, limiting the effectiveness of services post-independence (Greer Consulting Services, 2008; Weightman, 1989). Due in large to the contested governance prior to independence and the financial constraints post-independence, the Vanuatu Agricultural College (VAC) itself is relatively new, being built between 2002 to 2005, with the first courses being offered in 2007 (Vanuatu Agricultural College, 2016; Weightman, 1989). While the college itself creates new opportunities for agricultural education and training, it is also a product of China's growing

investment in the Pacific with funding for the college coming from the government of the People's Republic of China as part of their foreign aid programme (Asian Development Bank, 2000; Vanuatu Agricultural College, 2016).

VAC offers multiple different qualification options starting from a 16 week entry level course and working up to a 40 week level four certificate in agriculture (Vanuatu Agricultural College, 2015). The purpose of the college is 'to be the centre for the training of farmers and acquisition of farming technologies and skills for enhancing agricultural production and in doing so contributing to the economic and social development of Vanuatu' (Vanuatu Government, 2006, Section 2.3). According to the VAC website, 25 staff are employed at VAC, of which seven are employed as trainers for between 40 and 100 students who undertook courses over the 2015 year¹⁸, with total student fees covering around 3.6 percent of the 2015 operational budget (Rowland, 2016; Vanuatu Agricultural College, 2016). Other than VAC, there is little else in the form of formal agricultural education. This means any youth wanting to obtain a formal qualification in agriculture must either attend VAC or head overseas. Also, as VAC only offers courses up to national certificate level four, any students that wish to continue their education past this level must head overseas to places like Papua New Guinea, Samoa and Fiji (Greer Consulting Services, 2008).

While VAC offers great potential for agricultural training in Vanuatu, rural villager's perspectives of the college suggest that there are currently multiple barriers to reaching this potential (see Figure 6 [section 5.4]). One of the barriers is the length and cost of courses. Due to VAC's shortest available course being 16 weeks and 30,300 vatu, this has limited the range of ni-Vanuatu who can utilise this resource (Vanuatu Agricultural College, 2015). For many older ni-Vanuatu who have a family and household to look after, VAC courses are seen as a big commitment and cost, when often they are only after rather specific training and knowledge development. This was indicated by one participant who said that he would be happy to attend a two week course that could help him and the community but three months is too long to be away from the family and working his gardens. As well as length of courses, the cost of courses was also highlighted as an issue. While the cost of the courses may seem low when you take into account that course fees also cover accommodation and meals, the

¹⁸ No information could be found on enrolment numbers so I have use information from the VAC 2015 financial report and divided the total amount of course fees by cost of the cheapest course and most expensive course separately to estimate the student enrolment range.

reality is that many rural households struggle to earn enough to cover their children's primary education and they see the cost of agricultural training as an unnecessary burden. This is compounded by the perceptions that VAC offers little benefit for subsistence farmers as villagers perceive course material and curriculums to be focused on commercial agriculture. If courses are in fact more tailored towards commercial agriculture, then the college would be limiting its target beneficiaries to only a small proportion of the agricultural sector.

With little engagement between VAC and the rural communities involved in this research, it is not surprising that community perceptions of the effectiveness of agricultural education through VAC were predominantly negative. Participant's experiences suggested that most VAC students that returned to their village offered little in the way of support or facilitation of community agricultural development. This has no doubt affected the long term community perception of VAC and its perceived overall benefit within rural communities. However, multiple different factors will likely play a role in student's willingness and ability to share agricultural knowledge and facilitate agricultural development within the wider community. Two possible factors are cultural hierarchies around knowledge, generally connecting valued knowledge to village elders, and cultural perceptions around the power and influence that knowledge is seen to create. Through both my experiences in Vanuatu (as a volunteer and as a researcher), I have witnessed examples where there has been a reluctance for households to share knowledge outside of the direct family unit for what I perceive to be a fear of relinquishing a form of power and influence. For example, while working on VARTC farm in 2012, there was one worker who had great knowledge on grafting and cultivating new plant stock, but he would only pass on his knowledge to his direct sons, one of whom worked on the farm. In doing this, he set his son up to take over his position which was highly valued within the organisation.

As well as cultural influences, leadership, facilitation, and communication skills will also play an important role in students' abilities to engage with their communities and share their knowledge. This has been recognised in Ethiopia where technical and vocational education and training (TVET) curricula have started including leadership and community mobilisation training as part of agricultural courses in order to better equip students with the tools to support and facilitate community development and engage better with industry stakeholders (Davis et al., 2007; Livingston, Schonberger, & Delany, 2011). The findings from this research would suggest that this is an area that could be explored within the Vanuatu context as

participants have highlighted a clear lack of wider community engagement by returning students. Through improving student engagement within the wider community context, there is a greater potential for supporting the growth of positive perceptions of VAC and better supporting agricultural development overall.

The challenge of utilising agricultural institutions for the greatest benefit of the wider agricultural community is a challenge being faced in many LICs. In sub-Saharan Africa, critics of existing formal agricultural education and training (AET) services (Rivera, 2006; Spielman, Ekboir, Davis, & Ochieng, 2008; Vandenbosch, 2006) have pushed the need for AET institutions to break away from the formal structures of education, arguing for the need to 'include greater informal education...' and '[transform] educational institutions into multifunctional community learning centres' (Spielman et al., 2008, p. 4). Sub-Saharan Africa has similar rural demographics to Vanuatu in relation to the proportion of the population that are engaged in smallholder and subsistence agriculture (Livingston et al., 2011). Both Rivera (2006) and Spielman et al., (2008) highlight the need for AET services in sub-Saharan Africa to better engage and support the subsistence and smallholder sector through breaking away from the traditional linear approach to education and the rigidity of formal institutional frameworks. Papua New Guinea (PNG) has had similar issues, with Meinke et al., (2015, p.75) citing Bonney et al., (2012) noting 'that given the importance of agriculture as a foundational step for development and PNG's reliance on agriculture for food security and employment, the lack of a widely available agricultural education programmes at the VET [vocational education and training] level appeared to be a significant constraint to development'. With the buildings and facilities already in place at VAC, expanding the reach of course options through short course and informal courses to appeal to subsistence and smallholder farmers could be one way to better utilise the existing infrastructure and support training at the community agriculture level.

The collaboration and utilisation of complementing development resources have been identified as important components of creating an efficient and effective agricultural development programme in many LICs. Davis et al., (2007) identifies the networks, partnerships and interactions between research organisation, education, extension services, civil society, industry and the farmers themselves are critical to the movement of knowledge and development within the agricultural sector in Africa. The potential for building stronger connections and partnerships between development resources in Vanuatu is something that

I first identified while working at VARTC where I witnessed a limited level of engagement and collaboration between VAC, VARTC and the Department of Agriculture and Rural Development (DARD). With low levels of village awareness about all the potential services that VAC, VARTC and DARD can offer. This research has identified potential for these resources to collaborate to better inform and promote development opportunities and support greater community engagement. Growing networks between institutional resources and civil society could also be beneficial, especially in regard to village engagement, with participants in Nawalala village expressing a high level of regard for Zero Vatu compared to predominantly negative perceptions of VAC, VARTC and DARD: ‘when the Zero Vatu came and made their awareness to the people here, it kind of open the eyes of the people that they need to do something today to have a better tomorrow, and that is work’ and ‘[n]ow when Zero Vatu made their awareness, many people were moved by what they heard’ (Nawalala storian).

5.4 Research

The Vanuatu Agricultural Research and Technical Centre (VARTC) is the amalgamation of two former French research institutions, the Institute de Recherches pour les Huires et Oleagineux (IRHO) established in 1962, and the Institute de Recherches sur le Café et le Cacao (IRCC) established in 1981, which were transferred into the ownership of the Vanuatu Government in 2002 (Lebot, V., Siméoni, & Editeurs scientifiques, 2012, p. 4). VARTC is where I spent 10 months in 2012 working as a livestock assistant as part of a Volunteer Services Abroad (VSA) volunteer assignment. While the mandate for the 500 hectare research farm is to undertake and oversee research on the biological resources of Vanuatu, improved crop and livestock derived from research can then also be on-sold to the public (Lebot, V. et al., 2012). Due to VARTC’s long history of research, it is also an extensive source of knowledge through both its recorded research as well as through the accumulated knowledge of both staff and researchers that work there. However, while there is clear evidence of rural villagers seeking out VARTC for the purchase of coconut seedlings and cattle, I found little evidence to suggest that VARTC is actively sharing knowledge outside these two areas, despite having specialists in root crops, coffee, cacao, pepper, vanilla, bananas, and pasture. As well as being an extensive source of information on specialist crops, VARTC has integrated many contemporary farming practices such as grafting, electric fencing, computerised recording, post-harvest processing, artificial insemination, rotational grazing, and companion planting which are all potential activities that many farmers across different levels of agriculture could benefit from understanding.

Despite VARTC being a rich source of agricultural information and knowledge, this research has identified an overwhelming lack of recognition and understanding around VARTC's usefulness across all three villages. This was largely attributed to a lack of engagement and promotion from VARTC with participants saying: '...but for us here, we just don't have a single clue or idea as to what is really happening [at VARTC]' (Nawalala storian) and 'so they produced a lot of good things but it's the lack of information on what they are doing that is not getting to us farmers in rural areas' (Lorum storian). Multiple participants felt that if someone from VARTC were to come and explain to them what is going on at VARTC and how VARTC can help benefit rural villagers, then villagers would start to utilise the resource. Such pro-active engagement by research and AET institutions has been identified as a critical step to help reverse growing negative attitudes towards agricultural occupations especially amongst youth (Eissler & Brennan, 2015). There is a growing push for agricultural research institutions throughout low income countries (LICs) to engage with students from primary school level right through to post-secondary and AET levels as well as with industry workers themselves to help foster and build positive perceptions around the potential career paths within agriculture (Eissler & Brennan, 2015). As it currently stands, engagement and perceptions between rural villages and agricultural education and extension services tends to be low (Figure 6). However, greater engagement and inclusion of rural villages in the research projects could help create a sense of greater ownership for rural villages over village

agricultural development, which could lead to stronger relationships with other agricultural education and extension services.

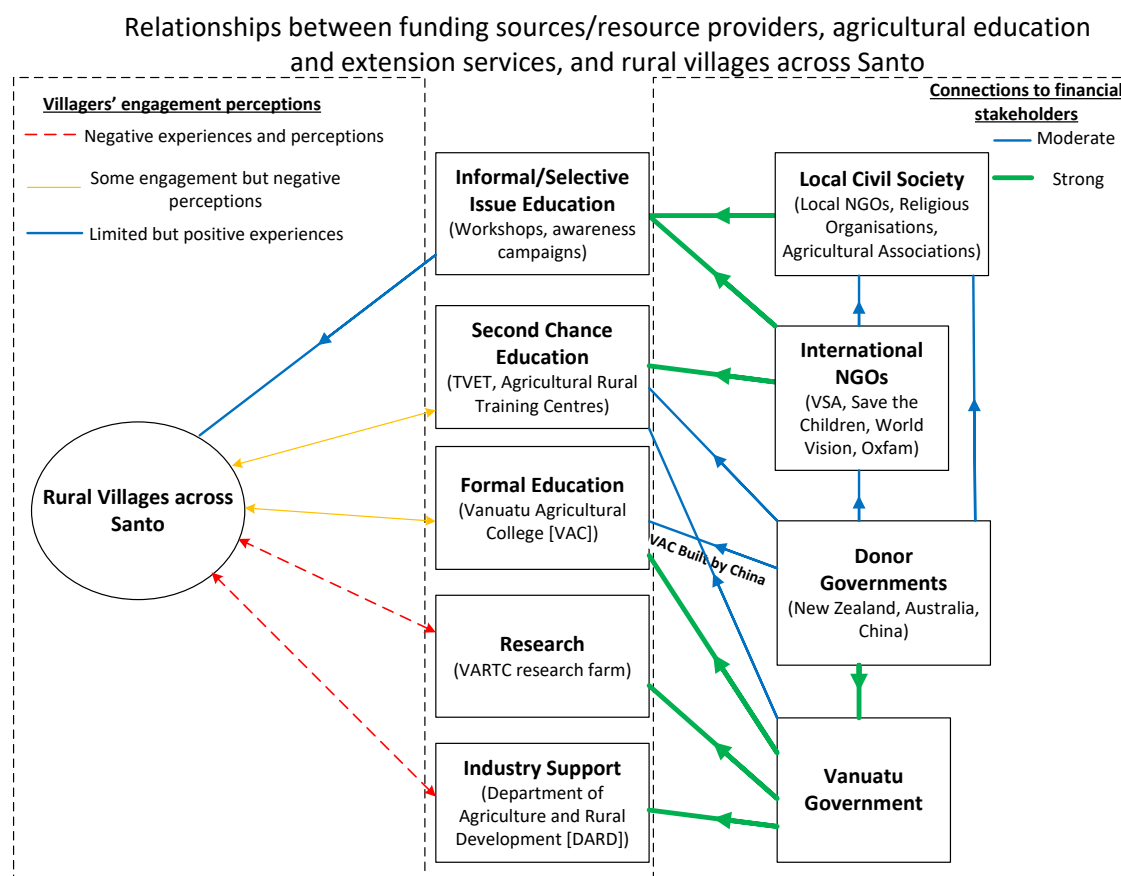


Figure 6: Diagram of villagers' perceptions of agricultural development resources (left) and resources connections to financial stakeholders (right).

As well as promoting agricultural research through different levels of engagement, incorporating different stakeholders in the actual research process has been found to improve the uptake of new agricultural development initiatives (Adekunle & Fatunbi, 2012). For example, slow agricultural progress in many rural African communities and a lack of engagement and utilisation of research institutions across many African countries led to research trials using an Integrated Agricultural Research for Development (IAR4D)¹⁹ approach (Adekunle & Fatunbi, 2012). The results from these trials found that the IAR4D approach created 'better returns to investment in terms of improved farmer productivity, improved income, better livelihood and quality of life for the farmers' (Adekunle & Fatunbi, 2012, p. 987). While significant amounts of research undertaken through VARTC is undertaken within rural communities throughout Vanuatu, from my observations and general discussions with staff and researchers at VARTC and with villagers, communities involved in many of these

¹⁹ IAR4D approach incorporates farmers, industry workers, extension services, educationalists and other stakeholders in the generation, dissemination and utilization of agricultural research and technology (Adekunle & Fatunbi, 2012).

research projects seem to be more part of the research environment rather than active contributors to the research process, dissemination, and application. While the perceived relevance of VARTC's research within rural communities could be heavily attributed to the lack of engagement as mentioned above, better collaboration and integration between communities and research institutions, would also likely improve the matching up of institutional research and villagers' research needs, improving villagers' perceptions of research resources.

Engagement between rural communities and agricultural institutions has not always been looked upon negatively by villagers, as participants from all three villages highlighted the era of field assistants (from the late 1970s to around 1994) as a period where advice and support were readily at hand (Greer Consulting Services, 2008). Research participants talked about field assistants as a success story with a couple of villagers recalling direct examples of occasions when field assistants had supported them in developing community agriculture:

'As I said, the first time I went to get coconuts from [VARTC] was because the field assistant was here. He helped the community a lot. It meant that we learnt there were new coconut varieties or whatever, he told us about them and then we sent some of us to get the information.' (Fimele storian)

This and other examples suggested that engagement over the 1980s and early 1990s between VARTC, DARD and rural communities was significantly higher and has since declined.

While limited engagement with rural communities by VARTC contributed to villagers' lack of knowledge about VARTC, the cost of transport and availability of people to talk to were highlighted as major factors affecting villagers' desire to seek out information themselves. From Fimele village, transport to VARTC requires hopping on a transport truck from South Santo to Luganville, and then another one from Luganville to VARTC, generally costing 500 vatu for each individual transport ride or around 2000 vatu (two days average village wage) for a round trip. From Nawalala, being more remote, transport to VARTC would cost between 1000 and 1500 vatu each way, and from Lorum, it is between 500 and 1000 each way. On top of this, villagers said that they are not guaranteed to find someone to help them when they get to VARTC. One participant even said:

'When we planted vanilla, I went into town for [VARTCs] expertise in pollinating the flowers and they said if you have money then you'll pay for our fuel to come with you

but I said ‘No, I don’t...’ and so the vanilla flowers are now flowering in my face with me doing nothing’ (Lorum storian).

Over time, the lack of engagement from the resources themselves, and the costs and effort involved in seeking out new agricultural information from VARTC, has led to a decrease in the overall motivation of rural villagers to engage with and utilise VARTC for community agricultural development. For many communities, villagers remain satisfied in their current practices and understanding until they are shown or explained the benefits of relevant new practices and crop varieties, or until a changing climate begins to have severe impacts. Fortunately, there does seem to be recognition of this by the Vanuatu Government with the Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB) priority objective two for DARD stating that ‘[b]y the end of 2018, Department of Livestock will ensure 100% of its new research programmes are well coordinated, evidence-based and results are documented and disseminated to the six Provinces through existing extension service’ (Vanuatu Government, 2014, p. 20). Figure 6 gives an overview of the general flows of information and resources leading to the direct engagement with resources.

5.5 Industry Support

The Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB) and the Department of Agriculture and Rural Development (DARD) are the main governmental bodies overseeing industry support and development for the agricultural sector in Vanuatu with the MALFFB aim of:

‘[Building] an agriculture sector that is robust and competitive, one that contributes to improved economic growth and trading opportunities, food security, reduction of poverty, and improved livelihoods ensuring also that the benefits derived are equally distributed between the rural and urban populations’ (Vanuatu Government, 2016a).

In recent years, one of the growing foci of MALFFB has been to work towards reducing imported food products through import substitution (Martyn, Rogers, & Mael, 2014). However, one of the challenges highlighted through this research will be around convincing rural communities to get on board with new market development initiatives. Due to failures of past market development projects, villagers from two of the three research villages indicated a reluctance to participate in new agricultural market projects due to past projects

failing and leaving them out of pocket. This was best summed up by a member of the Lorum community who said:

‘Another reason why it makes us not interested would be just like Serge said earlier, we worked on huge Kumara gardens at the white wood project site. That was only because [DARD] said they’ll come and collect the harvest to whichever markets that they find. Maybe just once or twice they come and collected the harvest, after that our kumara was left to rot and stink and everyone got discouraged.’(Lorum storian)

A villager in Fimele village also mentioned a similar example with a vanilla project suggesting that the trust of rural villagers may need to be re-established before some communities will be willing to participate in future market development projects.

There is, however, growing research that supports the call for new industry development, especially in low volume, high value commodities such as high value timbers, kava in Vanuatu and Fiji, fair trade coffee, cacao, and vanilla, and nuts such as nangae²⁰ (Lagataki, Kete, Rantes, & Johns, 2016; Morgan, 2013). Growing existing production in fresh fruit and vegetable and poultry markets which currently rely on the extensive importation of these goods to meet the growing demand from the tourism sector have also been highlighted as potential paths for agricultural growth (Martyn et al., 2014). However, as highlighted in the Vanuatu Agricultural Sector Policy 2015 -2030 report, ‘[n]o government authorities take responsibility for identifying new market opportunities resulting in an over reliance on a narrow range of traditional cash crops and limited opportunities for expanding income and revenue generation in the agricultural sector’ (Vanuatu Ministry of Agriculture, 2014, p. 18). This supports the perspectives expressed by some of the research participants who felt that if new markets were properly established and the right information passed on to the villagers, then a greater number of villagers would be willing to take up new market initiatives. Some participants also felt that properly established markets and new market opportunities would also encourage more youth into agriculture; ‘If there’s a market that opens with good opportunity for a lot of money then [youth] will forget their other options and focus on agriculture because they do have a lot of land but no market’ (Lorum storian).

²⁰ Nangae is a nut that comes from the Canarium tree grown in Vanuatu and is now sought after in Japan and France as a speciality ingredient used in patisserie (Morgan, 2013).

As well as providing little oversight for the development of new agricultural market opportunities, the Vanuatu Government has also recognised a lack of extension officers and funding to support agricultural development (Vanuatu Ministry of Agriculture, 2014). The result of this can be seen through participants' accounts of visiting the DARD office in Luganville only to find no-one present there to help them with their concerns. Participants in all three villages noted heading to the DARD office two or three times before finally being able to find someone that could help them with their query. This had clearly impacted on the villagers' willingness to seek advice and assistance from DARD. However, with the promise of increased funding and DARD staff, this may be an area that can turn around (Vanuatu Ministry of Agriculture, 2014). From the perspectives of the villagers, the reinstatement of field assistants would be the best-case scenario as this was mentioned as a desired outcome for the future in all three villages.

5.6 Outreach Education and Civil Society

Multiple outreach and civil society projects can be operating across Vanuatu at any one time with many being funded by international non-governmental organisations (NGOs), international donors, or government agencies, while others may be funded through local community groups and religious communities. Some projects such as rural training centres (RTCs) are ongoing, operating over continuous years, while others can be based on addressing a single issue such as climate change awareness and operate over a shorter time frame. Over the period of my field research, two NGOs were mentioned and discussed (although others were probably also operating). Oxfam has been heavily involved in the setup and running of RTCs through the Vanuatu Rural Development and Training Centres Association (VRDTCA) while Save the Children has been undertaking climate change awareness workshops in rural communities throughout Vanuatu. While projects through non-governmental organisations (NGOs) tend to have access to greater financial resources and support than other civil society organisations (CSOs), there is growing global recognition that NGOs are only one component of civil society and a greater level of support to the broader civil society sphere is needed to achieve more effective development (Banks & Hulme, 2012). In Vanuatu's broader civil society sphere, Zero Vatu, training farms run through religious affiliations, and farmer and grower associations were discussed to varying degrees and while these are not all the CSOs actively engaging with rural communities, these were the only ones mentioned during my field research.

With CSOs often working more closely with communities, it is not surprising that aspects of their approach seemed to resonate better with what communities regarded as effective forms of engagement. One of these approaches was community-based workshops, where a CSO would organise a workshop in a central village with invitations going out to surrounding village members to attend. These workshops would usually involve a presentation from the CSO on the relevant topic followed by open discussions and a meal. Community workshops were discussed with enthusiasm in all three villages and was support for this form of engagement undertaken by CSOs. This was due to both the face to face nature of the workshops which villagers regard as highly important, and the group discussions that past workshops have tended to facilitate. These two components are more in line with the traditional and social environment of village learning in Vanuatu which likely connects to villagers appreciation of them.

Internationally, many examples of successful agricultural education and extension service projects have used similar approaches with farmer field schools (FFS) across Africa, Indonesia and South America showing great success in facilitating community-based agricultural education where rural communities become the managers of their own educational needs and villages become the classroom (Davis et al., 2012; Feder, Murgai, & Quizon, 2004; Godtland, Sadoulet, De Janvry, Murgai, & Ortiz, 2004; Van den Berg & Jiggins, 2007). A large part of FFS success has been accredited to the flexibility of the programme in allowing each community to adapt their field school to the village context and take ownership for the project (Friis-Hansen & Duveskog, 2012; Thiele et al., 2004). The ability of agricultural education projects to encompass the community context and operate within the community environment is an area which seems to support successful engagement and learning.

While there was genuine support for workshops and greater in-village engagement, this study found that only two of the three research villages were able to recall examples of in-village engagement taking place in their village over recent years. These examples were in the form of workshops put on by either Zero Vatu and/or Save the Children. However, despite the limited amount of in-village engagement examples, both villages generally discussed the workshops in positive terms. However, one villager in Fimele village suggested that if workshops are not promoted properly, people may not attend on the grounds that they don't think the information will be that helpful for them:

‘There are two things, one is that a workshop needs to be in the interest of the people and the second is it has to come through the chief. If the chief was informed earlier on then he can organise for everyone to attend the workshop...Now if we understand a little about what the workshop is all about and how it could affect our future, then we will know it is important. Some people don’t understand the importance of something until they face the challenges then they’ll realise its importance. So if the information of any workshop goes through the chief and people understand what it’s all about then they will attend.’ (Nawalala storian)

This demonstrates the importance of working within the community context for in-village engagement, suggesting that it is not just a matter of taking the information out to communities but also working with those communities and cultural structures to facilitate the in-village engagement. This is consistent with international successes such as FFS and agricultural research committees (ARC) which attribute part of their success to the active role which communities play in running and maintaining the projects (Thiele et al., 2004).

5.7 Facing the Challenges

5.7.1 Engagement and collaboration

The challenges around improving rural participation and enthusiasm in development initiatives seem to highlight a bigger issue that runs throughout the different levels of agricultural development in Vanuatu, and that is the ability to support effective and active two-way engagement between rural communities and development projects. Understanding not only how to get rural communities to engage with development projects, but also how best to engage with communities to support continued enthusiasm, interest and engagement, are challenges being faced across the globe (Landini, Leeuwis, Long, & Murtagh, 2014). From the villagers’ perspectives, face to face community engagement, improved promotion of what resources and projects can offer, reduced costs of engagement and more context-specific projects are key areas where villagers expressed the potential for improvement. However, while some engagement methods seem to be more effective than others, Landini et al., (2014) highlight the need to better understand the overall psychosocial components of rural engagement, as encouraging rural communities to engage in development initiatives across the development sphere has been an ongoing challenge for 40 years. With villager perceptions around present and future engagement predominantly focusing on the external influences of village agricultural development, there is a need for a greater understanding of the internal influences such as what motivates internal and sociocultural change, what

motivates villagers to take up new ideas and what holds them back. While I do not have the expertise to undertake research in this field, such research would complement my own in building up a clearer picture of how best to engage with rural villages to support future agricultural development.

One of the challenges, however, even where the most effective forms of engagement are recognised, becomes the financial costs of implementing such approaches within institution, organisation, and individual project budgets. I would speculate that the termination of field assistants around 1994 was not due so much to a lack of effectiveness, but more likely due to the financial cost of field assistants for the Vanuatu Government at that time. While there is a desire for greater face to face engagement by many villagers, funding such forms of engagement often requires a greater financial commitment to agricultural development.

While the findings of this research identify a desire for greater face to face engagement by villagers, they also help identify the unrecognised potential of existing resources that receive significant funding but are poorly recognised by rural communities. With this in mind not all potential changes need to incur significant cost. For example, the issue of DARD staff not being present to offer advice to villagers who seek them out at the Luganville DARD office could potentially be remedied by setting aside a set day a week where a DARD staff member is available in the office for villagers to talk to. The introduction of short courses of relevance to subsistence and smallholder farmers through VAC and VARTC could potentially increase revenue without necessarily requiring much additional investment in staff and facilities. In addition, establishing new research partnerships between rural communities and VARTC could improve research dissemination to, and engagement with, rural communities. Ultimately though, such changes would need the government to take the lead on prioritising the agricultural development agenda.

Indeed there is some indication that the Vanuatu government is committed to placing greater resources into agricultural and rural development. The recent establishment of a new partnership between New Zealand, Vanuatu and the European Union aimed at supporting sustainable agricultural development will contribute increased resources for agricultural development (New Zealand Government, 2016). The establishment of a new agricultural policy framework should help create a more unified and clear direction for agricultural development, and a re-prioritisation of agriculture and rural development in the national

development agenda has the potential to help create better security for continued funding (Vanuatu Ministry of Agriculture, 2014). However, as indicated through this research, as well as through global research examples, it is important that the revitalisation of interest, enthusiasm and resources for agricultural and rural development in Vanuatu is directed towards a development path that takes heed of past development lessons and utilises both the rich global and local knowledge available to direct development in a culturally appropriate and sustainable way.

5.7.2 Climate Change

The need for agricultural and rural development has never been stronger with much of the Pacific facing a combination of challenges at the forefront of which is climate change. Even in remote villages that use traditional witch doctors and *klevas* (shaman) to cure ailments and manipulate the weather, climate change is now recognised as a reality of their lives. All three villages highlighted climate change as a major concern with participants mentioning multiple examples of observed impacts. These included less reliable seasonal patterns, warmer and dryer dry seasons, and changes to fruiting patterns of some species. An example I observed was mango trees fruiting in South Santo in May (the dry season) which usually only bear fruit between October and January (the warmer wet season). This supports some research that indicates that while some staple Pacific crops see reductions in production, there is potential for increased productivity from other crops (Park et al., 2015). Recognising the crops that have the greatest potential to sustain both nutritional needs and economic potential will play a crucial role in Vanuatu's adaption strategy. Supporting rural communities to take up these strategies will be just as important. However, while there was a clear desire to better understand how village communities can start to adapt to climate change and to take up more resilient crop varieties, villagers felt that little support or information was being given to them. This is where research and education offer great potential such as VARTC's work on cyclone-resistant coconuts and food security (Lebot, V. et al., 2012). However, VARTC's research will achieve little in helping rural communities adapt to climate change if the research it undertakes is not shared with the rural communities who could benefit from it. Whispers of change, however, are evident in the Vanuatu government indicating a desire to better disseminate research findings to farmers and stakeholders through strengthened linkages between VARTC, DARD, CSOs, farmers, development partners and VAC (Vanuatu Ministry of Agriculture, 2014, p. 30).

5.7.3 Youth and Migration

While climate change is one of the biggest challenges facing the Pacific, it is not the sole challenge that faces agriculture and rural development. Increasing urbanisation and migration are escalating agricultural challenges in Vanuatu. In two of the three research villages, I observed a distinct lack of youth, especially young males. This was reaffirmed in discussions with villagers mentioning that a lot of the youth had moved to Luganville or Port Vila in search of better work opportunities. Some villagers felt that this was because many youth get bored living in the rural village and see little opportunity to earn money. It is usually only the physically demanding and unskilled labouring jobs that youth feel are available to them despite most households having access to customary land that is undeveloped or underdeveloped. This is in line with global LIC trends which have seen youth perceptions of agricultural opportunities deteriorate as increasing proportions of youth migrate to urban areas (Biriwasha, 2012; Connell, 2011). This change in population distribution has meant that there are less young adult village members around to help sustain household gardens and village food production and more youth living in urban centres where they tend to have a greater reliance on imported food products (Lebot, Vincent & Siméoni, 2015). The villagers' perspectives support similar findings in other countries that highlight a need to foster improved perceptions of agricultural work in order to encourage greater numbers of youth to not only stay in rural communities but to also take up the opportunities that agriculture and rural development can offer (Biriwasha, 2012; Connell, 2011; White, 2012).

5.7.4 Information and Communication Technology (ICT)

Information exchange and acquisition is an important part of agriculture both in terms of agricultural education and extension services as well as just in everyday operation of agriculture (see Figure 7). The use of ICT in helping reduce farmers costs of acquiring agricultural information such as the latest market prices, weather forecasts, and the best crop varieties to plant, has had significant success in supporting development in many LICs (Aker, 2011; Chhachhar & Hassan, 2013; Muriithi, Eric, & Sarah, 2012). The use of ICT in agricultural education and extension is only a recent thing however, and there is little research exploring examples (Aker, 2011). Nevertheless, there is potential for it to help reduce engagement costs between communities and resources as well as making services more accessible (Aker, 2011; Chhachhar & Hassan, 2013; Muriithi et al., 2012).

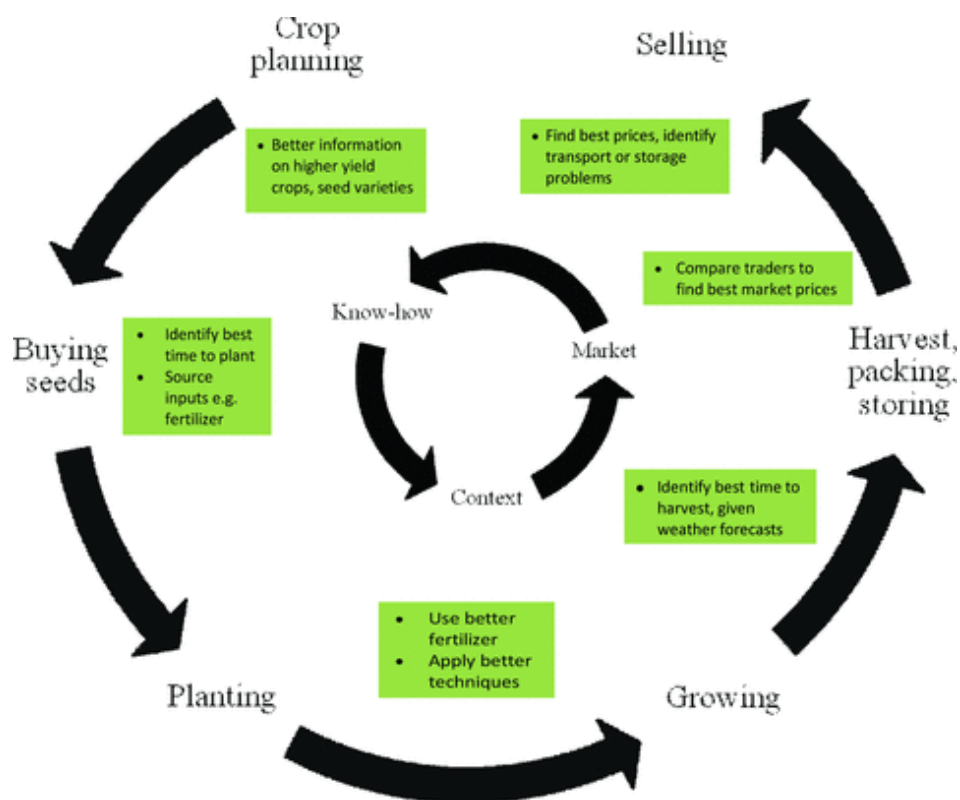


Figure 7: Stages of the agricultural production process and information needs.

Note: the outside ring indicates the different agricultural stages in crop production. The inner green boxes identify information required over with each stages. The centre ring indicates the different forms of information required. Retrieved from Aker (2011, p. 634)

ICT has been growing rapidly in Vanuatu since the establishment of a Telecommunications Policy Statement in 2007 (Figure 8) (Cullen & Hassall, 2016). In 2009, after significant influence and support from international bodies such as the World Bank, International Telecommunications Union and InfoDev, the Vanuatu telecommunications industry was deregulated (Cullen & Hassall, 2016, p. 6). In 2011, the Office of Government Chief Information Officer (OGCIO) was set up and the first Strategic eGovernment Plan was set up which was followed by the setting up of a national ICT policy and the laying of a submarine communications cable between Fiji and Vanuatu in 2013 which increased data transfer speed by over 200 times (Cullen & Hassall, 2016, pp. 8-9). It is now estimated that around 99 percent of Vanuatu households have access to a mobile phone and around 27 percent of the population are subscribed to the internet with a much greater percentage having access to the internet (Cullen & Hassall, 2016, pp. 6-7).

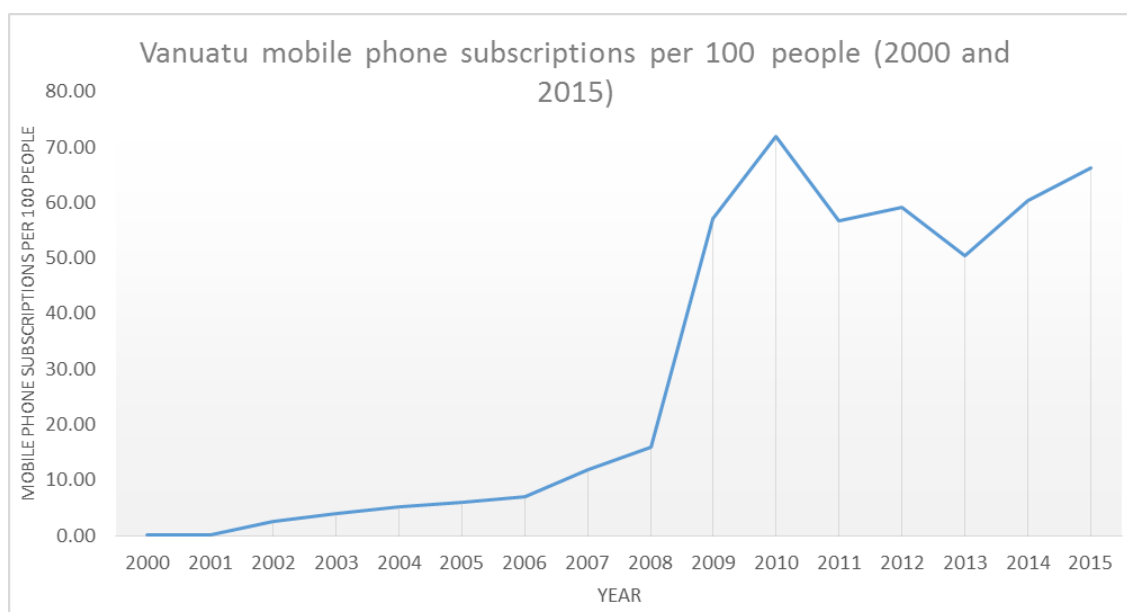


Figure 8: Mobile phone penetration rates in Vanuatu 2000 - 2015

Note: graph shows mobile phone penetration shown as mobile phone subscription per 100 people. Information retrieved from ITU website: <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>; accessed November 4, 2016

However, there seems to be little awareness of any agricultural based ICT projects, as not one of the three communities had heard of or knew about any ICT programmes available. Mobile networks were not mentioned at all as a source of agricultural information or engagement within any of the research villages. However, a lot of the progress in Vanuatu's ICT systems is still relatively recent, and according to Cullen & Hassall (2016), pilot agricultural projects are starting to take place. So the lack of use of ICT systems may be mostly due to the relatively new use of ICT in Vanuatu. While there is clearly a desire to implement and utilise ICT systems and access to ICT networks in Vanuatu has increased dramatically over recent years, it seems that agricultural education, research and extensions resources have yet to utilise this technology. Global research on ICT use for agricultural and rural development suggests that there is great potential for ICT systems to support agricultural growth in Vanuatu where ICT networks are already established and operating (Chhachhar & Hassan, 2013; Cullen & Hassall, 2016).

5.8 Discussion Summary

A large proportion of Santo's population has access to multiple agricultural education and extension services which have been put in place to provide support, advice, research and training to rural communities. However, this research indicates that there is limited interaction and engagement between the resources themselves and the rural communities they are in place to support. While these resources offer an array of useful information and

services, there seems to be little facilitation of information exchange provided by the resources. On top of this, barriers to engagement exist. Villagers are often discouraged from using agricultural education and extension resources due to the high costs of transport and education fees. This was coupled with some villagers reporting having to visit some resources multiple times before they would find someone available to help them. Compounding this is a lack of motivation on the part of villagers to pro-actively seek out information from these resources. This lack of motivation was largely due to an overall lack of understanding about what services and benefits different agriculture development resources offered and the relevance of resources to the village context in both content and setup. Internal challenges around the transfer of knowledge amongst the wider community also present barriers with knowledge often representing a form of power and influence that is not always openly shared. The accumulated effect of these issues has discouraged villagers from proactively seeking out agricultural resources for the advice and support that could potentially improve community wellbeing.

While many villagers feel relatively content with their current agricultural systems and practices, there is recognition that in the future, villagers will face new challenges. Climate change is already recognised as impacting on community food production with weather patterns and food security of growing concern. Demographic changes with youth migrating to urban centres are leaving older family members to work the gardens.

Addressing these challenges requires change and adaption by development resources. Greater integration of the village agricultural context is required along with greater involvement of villages themselves in supporting and facilitating agricultural education, research and development. It is clear that villagers respond best to face to face interaction, however, with travel costs restricting the feasibility of villagers travelling to the resources, a higher priority needs to be given to the use of in-village engagement methods such as workshops. The development of information transfer networks will also be important in order to disseminate and share knowledge with a large number of villagers including those in remote locations. ICT also offers potential in supporting agricultural education and extension services however, developments in this area are still in their early stages. While the past two decades has seen a relatively limited commitment to agricultural development in Vanuatu, there is evidence that this trend is changing both domestically and internationally.

6 Conclusion

The findings of this research indicate that current engagement between rural villagers and agricultural education resources is limited largely due to negative perceptions towards, and a lack of knowledge about resources, associated costs of utilising resources, limited modes of engagement, and the perceived relevance of much of the information these resources offer. However, these resources offer development services across many LICs and therefore it is better to discuss these findings in connection to the broader service context. The services identified through this research fall into four categories:

- Formal Agricultural Education – Vanuatu Agricultural College (VAC)
- Research – Vanuatu Agricultural Research and Technical Centre (VARTC)
- Industry Support – Department of Agriculture and Rural Development (DARD)
- Extension Services – Rural Training Centres (RTCs) and Zero Vatu

In order to discuss the findings of this research in relation to the broader literature, I have discussed the findings in connection to these four categories mentioned above before covering the challenges highlighted through this research.

The aim of this research was to identify issues that affect and influence two-way engagement between rural communities and agricultural education and extension resources, from the perspective of rural ni-Vanuatu villagers. The research aims to contribute towards better understanding engagement challenges and, to support improved engagement in the future. Undertaking research within indigenous ni-Vanuatu communities requires a break away from traditional Western-centric approaches to research in favour of approaches that are seen to harmonise more appropriately with Pacific indigenous paradigms. Due to the limited number of examples where indigenous research methods had been used in the Vanuatu context, my research methodology was largely based on personal experience in Vanuatu and from the literature on other Pacific research methodologies. Taking this into account, the methodology used for this research aligned itself with ni-Vanuatu values around relationships, respect, openness, and community, adopting the traditional discussion format of storian using the local Bislama language. This approach allowed me to counter some of the potential distrust associated with insider-outsider positionalities and build strong relationships with research communities. This supported more open discussion in the storian sessions and richer information through the research as a whole. While, as an outsider, there are limitations to

my ability to understand the complexities of the local context, the use of a Pacific indigenous research methodology has allowed me to explore rural ni-Vanuatu perspectives in a way that fosters positive experiences around the research process for both the researcher and the rural communities, establishing a foundation for continued relationships.

While the relationship between the researcher and research participants played an important role in this research, it was the relationship between agricultural education and extension resources and rural villagers that were the focus of investigation. Despite the potential of multiple complementing modes of engagement, this research found that little engagement seems to take place between the rural communities and agricultural development resources. However, within the engagement sphere that does exist, the research found that the most common way rural farmers learnt new agricultural information was indirectly through engagement with other community members more than directly from resources themselves. However, even these internal forms of sharing information were limited due to perceptions around knowledge being a form power and influence within a community. While examples of other forms of at-source engagement, such as villagers seeking advice from resource staff and students attending the agricultural college, do play a role in the exchange of agricultural information with rural communities, negative perceptions connected to the resources meant engagement was infrequent and limited. Contributing to these negative perceptions were concerns around cost, reliability, and appropriateness of the resources to the context of rural livelihoods. However, these concerns were not all connected to all resources, with different resources being associated with different challenges.

The agricultural development resources mentioned in this study cover a range of services such as education, research, advisory services and outreach, which are a common part of agricultural development across many low-income countries (LICs). While engagement was limited across all areas, engagement was impaired by different challenges with the different resources. While the biggest limitations to engagement were the costs and length of courses and perceived relevance of courses for semi-subsistence agriculture, the limitations for industry support services were the reliability and accessibility of advisory workers accompanied by the increasing costs of transportation each time support staff are sought out but not available. Past failures to achieve anticipated market developments have also created a reluctance amongst some communities to work with industry support services in new market development projects. Interestingly, one of the biggest limitations to engagement

with agricultural research services was simply the lack of general knowledge and understanding of what products and services are offered by the research facility. Awareness of the benefits from engaging with different resources seemed to be an issue across all villages and would suggest improved marketing and promotion of different resources could go a long way to improving engagement.

While villagers' negative perceptions have tended to be more focused on the limitations of external influences to their agricultural development, this research was able to identify challenges within the village environment which would also likely contribute to the limited levels of engagement. One of the biggest barriers to engagement from within rural communities is that many villagers carry the perception that their knowledge and skill base has sustained them and past generations well enough so there is little reason to make an effort to change what works. These perceptions not only reduce villagers' motivation to proactively seek out agricultural development services, but can also impact on the number of people that attend in-village initiatives such as workshops.

While there is a need to better improve villagers' perspectives around agricultural development opportunities and benefits, there are clear cultural hierarchies and systems that need to be incorporated into this process in order for development to keep within the ni-Vanuatu cultural context. This will often mean working alongside the older members of communities, although there is also a need to incorporate the youth population into this process. Retaining youth in rural villages is a growing challenge in Vanuatu with participants of two of the three villagers mentioning the growing trend of village youth migrating to urban centres, leaving the parents and older members of the community to look after the agricultural land. Again, this connects to the social perceptions around agriculture, especially in connection to agriculture as a career opportunity for youth. Predominantly, these perceptions of community agriculture are a major obstacle for Vanuatu agricultural development and are a challenge facing many LICs.

While much of this research has focused on the negative perceptions around engagement with agricultural education and extension services, there were also positive perceptions expressed towards the resources, especially around their benefit to Vanuatu agriculture as a whole. Multiple research participants felt that the VARTC research farm had done some beneficial research in the past and was a good resource to have in Vanuatu. This was also true

of the Vanuatu Agricultural College (VAC), which participants felt could teach students a lot of useful knowledge. Participants across all three villages expressed a desire to have greater engagement with agricultural education and extension resources but desired more in-village engagement. There was also evidence that perceptions around some Western concepts are changing as some rural communities integrate greater levels of Western scientific understanding of the world around them with their own cultural understandings.

Accompanying positive perceptions of agricultural development resources is a growing recognition of the role these resources can play in addressing future agricultural challenges. At the fore of these challenges is the recognition that natural systems are changing due to climate change and will continue to change. Across all three villages, participants mentioned examples of environmental change that they attributed to climate change. Climate change and connected issues such as food security have the potential to have a major negative impact on Vanuatu which is a concern not lost on the Vanuatu people. Already, according to participants, seasons have become less predictable and more extreme, so much so that the weather was perceived to have moved out of the influence of local shamans or witch doctors in one community. Local diets have also had to change as dietary staples such as taro are susceptible to dying off over long dry summers. However, some research suggests that there may be the potential for climate adaption strategies and scenarios to improve production of some crops. While these improved production scenarios are only associated with certain crops, it does demonstrate the important role adaption research, education and extension services can play in addressing future agricultural challenges.

Recognising that agriculture is a vital part of life to the wider Vanuatu population, there is a real need to refocus agricultural development towards the village context which accounts for the majority of the population. This requires engaging with and understanding the village context and integrating it into agricultural education and extension resources as a key component of agricultural development. Agriculture in Vanuatu is fundamental for supporting national stability and food security in the future, yet the challenges to be faced on the horizon will only make it harder for villagers to maintain their current agricultural systems. Change and adaption is essential and this won't be achieved without effective agricultural education and extension resources. With this in mind, this research can help support more efficient and effective agricultural education and extension services that effectively serve the

needs of communities and, coupled with a greater focus on agricultural development both nationally and internationally, creates promise for the future.

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Appendix A: Personal question check-list for storian sessions

Questions hopefully covered through storian sessions.

- 1) What agricultural education resources do individuals know about and see as available for their use as subsistence farmers?
- 2) Do any of the individual subsistence farmers use any of the agricultural education resources such as the agricultural college, VARTC research farm, Rural training development centres (RTDCs)?
- 3) What do the individuals participants know about these agricultural education resources?

For agricultural education resources used by individuals:

- a) How do participants find these resources in regard to helping them and their families improve their lives?
- b) For what purpose do participants use these resources?
- c) How do participants use these resources?
- d) What influences participants use of the resources?
- e) What have been some of the influencing factors about these resources that participants feel have encouraged them to use them?
- f) How do participants see themselves and their community using these resources in the future?
- g) What have been some influencing factors about these resources that has limited the use of them by participants?
- h) What could be done to help participants get more from these resources?

For agricultural education resources individuals do not use:

- a) What benefit do participants think these resources can offer them, their families and their community?
- b) What factors do participants feel, prevents or discourages them from using these resources?
- c) In the future, how would participants like to see themselves engaging with the different resources?
- d) What changes do participants feel could be made by the different resource operators to better encourage the future use of them by the community?
- e) How do participants think the different resources could be improved?

4) How much do participants know about climate change?

- a) Do participants feel climate change will have an impact on them, their family and their community?
 - a. If yes: how do participants think climate change will impact them, their families and their community?
 - b. Do participants feel there are things they, their community and the Vanuatu government could do to help provide better food security to their families, community and for Vanuatu?

Appendix B: Human Ethics approval Memorandum



Phone 0-4-463 5480
Email susan.corbett@vuw.ac.nz

MEMORANDUM

TO	Andrew Bird
COPY TO	John Overton, Polly Stupples
FROM	AProf Susan Corbett, Convener, Human Ethics Committee
DATE	19 April 2016
PAGES	1
SUBJECT	Ethics Approval: 22730 Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to using agricultural education resources on Espiritu Santo

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved from the above date and this approval continues until 24 February 2017. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Kind regards

Susan Corbett
Convener, Victoria University Human Ethics Committee

Appendix C: English and Bislama project information sheets



Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to the use of agricultural education resources on Espiritu Santo

INFORMATION SHEET FOR PARTICIPANTS

Thank you for your interest in this project. Please read this information before deciding whether or not to take part. If you decide to participate, thank you. If you decide not to take part, thank you for considering my request.

Who am I?

My name is Andrew Bird. In 2012 I lived in Santo for one year and worked with cattle on the VARTC (commonly known as IRHO) research farm. Now I am a Masters student in Development Studies at Victoria University of Wellington. This research project is work towards my thesis.

What is the aim of the project?

This project is looking at how subsistence farmers use agricultural education to improve garden crops, farm production, dietary nutrition and to understand climate change. This project aims to find out if subsistence farmers know about and use rural training centres, the VARTC research farm or the agricultural college. This project hope to identify what encourages subsistence farmers to use agricultural education resources and what prevents them from using the resources.

This research has been approved by the Victoria University of Wellington Human Ethics Committee 22730.

How can you help?

If you agree to take part I will hold storian sessions in the community meeting house (nakamal). I would everyone to openly talk about their perspectives on the different agricultural development resources. I would like to understand if you think these resources are good or not so good for you. I would also like to understand why you think resources are good or not so good. I will record the storian sessions and write them up later. You can stop the interview at any time, without giving a reason. You can withdraw from the study up to four weeks after the last storian session or before June 24. I will leave my mobile phone number with you so that you can contact me if you have any concerns. If you withdraw, the information you provided will be destroyed.

What will happen to the information you give?

This research is confidential. I will not name you in any reports, and I will not include any information that would identify you. Only my supervisors and I will read the notes or transcript of the interview.

The interview transcripts, summaries and any recordings will be kept securely and destroyed 3 years after the research ends.

What will the project produce?

The information from my research will be used in my Masters thesis. You will not be identified in my report. I may also use the results of my research for conference presentations, and academic reports. I will take care not to identify you in any presentation or report.

If you accept this invitation, what are your rights as a research participant?

You do not have to accept this invitation if you don't want to. If you do decide to participate, you have the right to:

- choose not to answer any question;
- ask for the recorder to be turned off at any time during the interview;
- withdraw from the study up until four weeks after your interview;
- ask any questions about the study at any time;
- receive a copy of your interview recording (if it is recorded);
- read over and comment on a written summary of your interview;
- agree on another name for me to use rather than your real name;
- be able to read any reports of this research by emailing the researcher to request a copy.

If you have any questions or problems, who can you contact?

If you have any questions, either now or in the future, please feel free to contact either:

Student:

Name: Andrew Bird
University email address:
andrew.bird@vuw.ac.nz

Supervisor:

Name: Polly Stupples
Role: Development Studies Lecturer
School: Geography, Environment and Earth
Sciences
Phone: 0064 4 4636793
polly.stupples@vuw.ac.nz

Human Ethics Committee information

If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett. Email susan.corbett@vuw.ac.nz or telephone +64-4-463 5480.

Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to the use of agricultural education resources on Espiritu Santo

INFOMESEN PEPA BLONG PESEN HU WANTEM PATISIPET

Tangkyu tumas blong interes blong yu long projek ia. Plis ridim infomesen ia bifo yu decidem sapos yu wantem takem pat long hem. Sapos yu desidem se yu wantem takem pat, tangkyu tumas. Sapos yu desidem se yu no wantem takem pat, tangkyu long taem blong yu blong tintin blong joenem mifala

Mi huia?

Nem blong mi *Andrew Bird*. Long 2012 mi bin stap long Santo blong wun yia mo mi wok long saed blong buluk long VARTC (IRHO) risej fam. Nao ia mi wan Masters studen long *Developmen Stadis* long Victoria univesiti blong Wellington. Hemia nao Risej blong progek ia, blong thesis blong mi.

Wanem taget blong projek ia?

Projek ia i lukluk long hao oli subsistense fama yusum edukesen blong agrikalja blong impruven ol crop long ol garden blong ol fama, blong helpem fama i save long saed blong climate jenis, mo blong helpem fama i save long saed blong nutrisen. Projek ia i blong faenem aot se sapos ol subsistense fama oli stap yusum rurol trening senta o VARCT risej fam o agrikalja skul. Tu projek ia i wantem faenem aot se taem yu yusim edukesen blong agrikalja yu luk nao se wenem pat i gud mo i helpem yu fullap afta wenem pat nao i no gud tumas long saed blong edukesen risos.

Risej ia oli bin apruven blong Victoria yunivesiti blong Wellington Human Ethics Komiti (Hemi wun komiti blong lukluk long ol aplikesen blong risej projek mo jekem blong luk se i gud o no). Projek numba: 22730.

Hoa nao yu save help

Sapos yu wantem takem pat, bae yumi holem olgeta storian nao long nakamal. Mi wantem olgeta long toktok long saed blong wannem nao yu tingbout ol taem yu usem agrikalja developmen risos. Mi wantem save sapos agrikalja developmen risos is gud o no gud long yufala. Mo sapos i gud, yu talem se from wenem nao i gud, sapos i no gud yu talem se from wenem nao i no gud. Bae mi rekodem storian/toktok blong yu long digital rikoda afta raetem daon bihaen.

Sapos yu no hapi long storian/toktok blong yu, i no gat problem sapos yu no wantem ko mo, yu save tes stop. Yu save livim projek long eni taem wetaotem eni risen hemia raet blong yu. Sapos afta olgeta toktok/storian blong expenem projek i finis afta yu no wantem stap blong tekem pat long projek, bam bai yu nidim blong talem aot long mi bifo Jun 24 blong mi karem aot information blong yu long projek.

Bam bai mi livim mobile namba blong mi wetem yu fala blong kolem mi sapos yu gat sam concen blong tok from.

Bae wanem i happen long ol infomesen we bae yu givim long mi?

Risej ia hem i bitwin yu mo mi nomo. Bai mi no yusum nem blong yu long eni ripot mo bai mi no yusum eni infomesen blong talem long wan nara man we hem i kam long mi.

Bos blong mi mo mi nomo we bae i lisen long digital rikoding blong yu mo ridem, raetem aot rikod blong storian/tok tok blong yumi.

Ol digital rikoding mo nots we mi raetem daon long rikod bea mi kipim sef mo bae mi destroyem afta wun yia afta risej i finis.

Wenem nao bae wanem projek ia i produsem?

Ol infomesen blong risej blong mi bae mi yusum long yunivisti Mastas (repot blong yunivisiti projek blong mi) blong mi. Ol nara pesen/man bai oli no save yu taem oli ridim ripot. Mi mebi yus infomesen blong ripot blong konfrens wetem ol nara yunivisti resij ripot. Bae mi tekem kea se bai i no gat wam pesen o wan man we bai i save yu long konfrens mo ripot we bai mi raetem blong kipim private infomation blong yu i sef.

Bae yu nidim blong givim pemisin blong yu blong helpem mi wetem infomation blong yu blong mi save raetem aot projek blong mi.

Bae yu no nidim blong talem yes long invitesen ia blong mi blong yumi tu wok tuketa sapos yu no wanten, hem ia raet blong yu. Bae yu nao i disaed sapos yu wantem patisipet long projek ia, hem ia raet blong yu, disisen hem i blong yu.

- Supos yu disaed blong no ansa eni kwestin hem I olraet
- Supos yu askem blong mi offem rekoda hem I olraet
- Supos yu livim stadi eni taem bifo Jun 24 hem I olraet
- Supos yu askem eni kwestin long saed blong stadi long projek ia
- Supos yu wantem wan kopi blong repot blong toktok blong yumi bae mi save givim yu wan
- Supos yu wantem you save mekem wan komen long report we mi raetem
- Supos yu wantem yumi save jusum wan nara nem blong putting long ples blong nem blong yu supos yu wantem nem blong yu I stap privet
- Supos yu wantem bai yu save gat akses long ripot blong risej ia, I posibol blong mi imelem I kam long yu taem yu rekwestem.

Sapos yu got eni kwestin o trabol, bai huia yu save kontakem?

Sapos yu got eni kwestin, nao o long fiuja , plis kontak:

Studen:

Nem: Andrew Bird

Bos blong mi blong yunivesiti:

Nem: Polly Stupples

Univesiti imeil adres:
andrew.bird@vuw.ac.nz

Role: Lecturer
Skul: Skul blong Geography, Environment
and Earth Sciences
Telefon: 0064 4 4636793
polly.stupples@vuw.ac.nz

Human Ethics Komiti infomesen

Bae yu gat eni trabol long saed blong aksen blong resij, bae yu save kontaktem Victoria univesiti blong Wellington HEC pesen:

Associate Professor Susan Corbett

Imeil: susan.corbett@vuw.ac.nz

Telefon: +64-4-463 5480.

Appendix D: English and Bislama participant consent forms



Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to the use of agricultural education resources on Espiritu Santo

CONSENT TO INTERVIEW

This consent form will be held for 5 years.

Researcher: Andrew Bird, Development Studies, Victoria University of Wellington

- I have read the Information Sheet and the project has been explained to me. My questions have been answered to my satisfaction. I understand that I can ask further questions at any time.
- I agree to take part in an audio recorded interview.

I understand that:

- I may withdraw from this study up to four weeks after the interview and any information that I have provided will be returned to me or destroyed.
 - The information I have provided will be destroyed 3 years after the research is finished.
 - Any information I provide will be kept confidential to the researcher and the supervisor. I understand that the results will be used for a Masters report and a summary of the results may be used in academic reports and/or presented at conferences.
 - My name will not be used in reports, nor will any information that would identify me.
-
- I would like a copy of the transcript of my interview: Yes ☐ No ☐
 - I would like a summary of my interview: Yes ☐ No ☐
 - I would like to receive a copy of the final report and have added my email address below. Yes ☐ No ☐

Signature of participant: _____

Name of participant: _____

Date: _____

Contact details: _____

Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to the use of agricultural education resources on Espiritu Santo

RAET BLONG STORIAN

Fom ia blong raet, bae holem blong 5 yia.

Riseja: Andrew Bird, Dvelopmen Stadis, Victoria Univesiti blong Wellington

- Mi bin ridim finis infomesin leta mo oli explenem projek finish long mi. everi question we mi gat oli explenem mo mi andestanem. Mi andestanem se supos mi gat mo question long fuja bai mi save askem.
- Mi agri blong tekem pat wetem vois receding long inteviu ia.

Mi andestan se:

- Mi save stop blong tekem pat long stadi ia afta 4 wik I pass afta long intaviu blong mi o supos no mi givim wan det we mi ting se mi wantem stop, afta eni infomesion we mi givim I save kam back long mi o supos no mi talem oli sakem aot.
 - Infomesion we mi mi givim blong projek ia bai oli sakem aot afta team study ia I finis.
 - Everi infomesion we mi givim bam bai hem I stap olsem wan privet infomesion we bai man we hem I stadi long hem wetem techa blem nomo bai oli save lukem, hem ia hem I blong kipim yu privet. Mi andestan se ol resal blong projek ia bai oli usum long wan repot *Masters wetem wan samari blong ol resal bai oli usum blong wan academic repot mo wan presentasion long sam conference.*
 - Bai oli no usum nem blong mi long ol repot o eni nara infomesion blong mekem ol man oli save se mi nao mi givim aot ol infomesion ia.
-
- Mi wantem wan kopi blong ol rekot blong intaviu/toktok blong mi. Yes ☐ No ☐
 - Mi wantem wan sot repot blong intaviu blong mi. Yes ☐ No ☐
 - Mi watem risivim wan kopi blong finol repot blong stadi ia afta mi save providem wan email adres blong mi andanit long pepa ia. Yes ☐ No ☐

Saenem nem blong yu: _____

Raetem nem blong yu: _____

Det: _____

Fon namba wetem eria yu lif lem: _____



Transcribing Confidentiality Agreement

Exploring the perspectives of Ni-Vanuatu subsistence farmers in regard to the use of agricultural education resources on Espiritu Santo

Principle Investigator: Andrew Bird

I _____, agree to ensure that the audio tapes I transcribe will remain confidential to Andrew Bird and myself.

I agree to take the following precautions:

1. I will ensure that no person, other than Andrew Bird hears the recording
2. I will ensure that no other person has access to my PC.
3. I will delete the files from my PC once the transcription has been completed.
4. I will not discuss any aspect of the recordings with anyone except Andrew Bird.

Signature: _____

Date: _____

Appendix F: Vanuatu Cultural Centre research approval letter



.VANUATU NASONAL KALJORAL KAONSEL
Vanuatu National Cultural Council
Conseil National Culturel du Vanuatu

VANUATU KALJORAL SENTA
Vanuatu Cultural Centre
Centre Culturel du Vanuatu

P.O. Box 184, Port Vila, Vanuatu, South Pacific Phone / Fax: (678) 26590 Email: vkcs@vanuatu.com.vu

30th March 2016

Andrew Bird
Victoria,
University of Wellington,
PO Box 6140
New Zealand

Dear Andrew,

RE: APPROVAL FOR RESEARCH PERMIT

This is to officially inform you that permission has been granted for you to carry out research on how subsistence farmers in three different communities over Santo, use existing agricultural education resources such as VARTC research Centre, the agricultural college or rural development training centers in Vanuatu as requested in your letter of February 4th 2016.

It is our hope that you abide with our research policy while doing your research in this country, And we thank you for choosing Vanuatu as a host country for this important research.

Yours Sincerely,

Asal Lazare
Director
Vanuatu National Cultural Council



NASONAL MUSEUM
National Museum
Musée National

REJISTA BLONG OLGETA OLFALA PLES BLONG VANUATU
The Vanuatu Cultural and Historic Sites Survey
Inventaire Sites Historiques et Culturels du Vanuatu

NASONAL FILM MO SAON UNIT
National Film and Sound Unit
Service national du Film et du Son

NASONAL LAEBRI
National Library
Bibliothèque Nationale