Foreign aid and the development of Bougainville

‘Australian aid as a catalyst for economic development’

A thesis submitted for a degree of Master of Arts, School of Law, Education, Business and Arts, Charles Darwin University

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Declaration

This thesis contains my own work, collected, analysed and compiled as a result of my own investigations, and all references to ideas or work of other researchers have been specifically acknowledged.

Signed

Date: 09 July 2015
Dedication

This thesis is dedicated to my family, with special mention to my dad, late mother and wife, and son Junior. Prioritising this paper was a burdensome sacrifice to other commitments I owe to my family.
Acknowledgement

I acknowledge everyone who contributed to making this study possible, especially my government, the Autonomous Bougainville Government and Mr. Paul Kebori, Deputy Administrator – Policy, for his endorsement and approval of my training. I also thank Mr. Robert Okuru and Patrick Malision Dio for their support of me while conducting this study. My supervisors Professor Rolf Gerritsen and Professor Linda Rosenman guided and supported me while I was working on this thesis.
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Abbreviations

ABG – Autonomous Bougainville Government
ACIAR - Australian Centre for International Agricultural Research
ADF – Australian Defence Force
ASI - Agriculture Systems Innovation
APEC- Asia-Pacific Economic Cooperation
AusAID – Australian Assistance for International Development
BCA- Bougainville Copper Agreement
BCL- Bougainville Copper Limited
BCTRRP - Bougainville Coastal Trunk Road Rehabilitation Project
BCTRMP - Bougainville Coastal Trunk Road Maintenance Project
BCCDRP - Bougainville Cocoa and Copra Dryer Rehabilitation Project
BDC- Bougainville Development Corporation
BEC - Bougainville Executive Council
BIG- Bougainville Interim Government
BPA – Bougainville Peace Agreement
BRA – Bougainville Revolutionary Army
BSPC- Bougainville Special Political Committee
BTG - Bougainville Transitional Government
BWRP - Bougainville Wharves Rehabilitation Project
CCI - Cocoa and Copra Institute
COE - Council of Elders
DFAT – Department of Foreign Affairs and Trade
DWFNs – Distant Fishing Nations
EEZ – Exclusive Economic Zone
FSM – Federated States of Micronesia
GDP – Gross Domestic Product
GIF – Governance and Implementation Fund
GoPNG – Government of PNG
HIP- High Impact projects
HIV/AIDS - Human Infection Virus/ Acquired Immune Deficiency Syndrome
ILG - Integrated Land Group
IMF – International Monetary Fund
IFAD - International Fund for Agricultural Development
JICA- Japan’s International Co-operation Agency
JSB – Joint Supervisory Body
LNG - Liquefied Natural Gas
MHR - Member of the House of Representatives
MILD - Melanesian Indigenous Land Defence Alliance
MOU - Memorandum of Understanding
NEC- National Executive Council
NFA - National Fisheries Authority
NGO – Non- Government Organization
NM – Nautical Miles
NZ – New Zealand
NZAID – New Zealand Aid
ODA – Official Development Aid
PICs – Pacific Island Countries
PFD- Project Formulation Document
PMG – Peace Monitoring Group
PMU - Project Management Unit
PNG- Papua New Guinea
PNG DF- Papua New Guinea Defence Force
PNGK - Papua New Guinea kina
PPA- Productive Partnership Agriculture
RMI – Republic of Marshall Islands
SAP – Strategic Action Plan/ Strategic Adjustment Program
SDA – Seventh Day Adventist
SIDS – Small Islands Developing States
SIF – Special Intervention Funds
SLO – Social Licence to Operate
SPSN – Strongim Pipol Strongim Naisen
UN – United Nations
UNDP – United Nations Development Program
USA – United State of America
USSR- Union of Soviet Socialist Republics
VCLR- Voluntary Customary Land Registration
VDS – Vessel Day Schemes
WCPO - Western and Central Pacific Ocean
WTO - World Trade Organization
WWI – World War One
WWII – World War Two
Abstract:

This study explores whether the development assistance delivered by Australian Department of Foreign Affairs and Trade (DFAT) can be better utilized to achieve Bougainville’s future economic development. In investigating the factors, issues and challenges that currently constrain aid and development in Bougainville, I focus upon aid policy and procurement processes, Bougainvilleans’ socio-cultural features, the post-conflict situation, and aspects related specifically to SIDS (Small Island Development States). Analysis of these factors provided understanding of aid-driven development issues and challenges within a post-conflict, culturally-based Melanesian SIDS territory.

In an attempt to address such problems, a case study of the cocoa industry has been conducted as a model to illustrate how and what aid resources can be used to assist Bougainville’s future development. A variant of neo-liberal aid-driven development theory, plus the untied aid model and formal aid management principles are adapted to develop a road-map for improving the cocoa industry with DFAT aid, in pursuit of Bougainville’s future economic development.
Chapter 1:

Introduction and methodology

1. Introduction

The objective of this study is to explore how Australian aid can assist Bougainville’s future economic development. The focus is principally on DFAT (Department of Foreign Affairs and Trade) aid because it is the largest donor among the donor agencies to Bougainville. For convenience DFAT is used for the whole period here covered to label Australian aid because it subsumed the formerly independent aid agency, AusAID. Use of both terms was seen as more confusing that using DFAT for the whole period.

Bougainville comprises a major island (the mainland) together with Buka Island and the outer islands. It is geographically located south-west of Port Moresby, the capital of PNG (Papua New Guinea), which is northeast of Australia. Its landmass is approximately 8,730 square kilometres. It has a population of about 260,000 people, who are overwhelmingly Melanesians. Bougainville’s annual per capita income is about PNGK 3,500 (about A$1,750) (Jennings & Claxton 2013).

The Bougainville crisis erupted in 1988, caused by controversies related to the inequity of both the economic benefits from the Bougainville Copper’s Panguna mine and the severe regional environmental damage caused by the mine. The warring parties were the BRA (Bougainville Revolutionary Army) and the PNGDF (PNG Defence Force). Eventually peace was restored with the signing of the BPA (Bougainville Peace Agreement) between the PNG government and Bougainville leaders in 2001.
Currently, Bougainville is an autonomous region of PNG under a Presidential System of government inaugurated in June 2005. It is struggling to restore its law and order systems, revive the economy, and rebuild and maintain infrastructure destroyed over the nine years (1988-1997) of crisis. A referendum is to be conducted to determine the political future of Bougainville, not prior to the year 2015 and no later than 2020 (Bougainville Peace Agreement 2001).

Many donors including the UN (United Nations), JICA (Japanese International Cooperation Agency), NZAID (New Zealand Aid) and DFAT provide assistance for Bougainville’s post-conflict re-development. The impact of this foreign assistance has contributed positively towards various aspects of Bougainville’s development challenges. This is exemplified by the 15 bridges, costing PNGK 95M (about A$47.5M), constructed by JICA between 2010 and 2013 along the main highway linking north, central and south Bougainville (Japanese International Cooporation Agency 2012).

The UN played a very important role in monitoring the cease-fire (signed by the PNGDF and the BRA in 1997) and also headed peace-building and weapons disposal programs, which resulted in the establishment of the ABG (Autonomous Bougainville Government) in 2005 (Bougainville Peace Agreement 2001). NZ aid continues to support the Law and Justice sector, through recruiting and training the auxiliary police men and women who work in local communities (McGovern & Taga 2009).

This study is focused on the role in the economic development of Bougainville of Australian ODA (Official Development Assistance), delivered through the DFAT. Aid donated through NGOs (Non-Government Organization) agencies is not included in
this study. According to Smith (1989) Australian aid to Bougainville dates back to before the World War II period, when various missions were assisted to provide goods and services in the 1920s. For example, in 1927 the Australian colonial administration in Bougainville assisted small schools run by various missions and also assisted with development of the Panguna mine in the 1960s.

The amount of DFAT aid to Bougainville has increased significantly over recent years. Nevertheless, more is needed; Jennings and Claxton (2013), even argued that DFAT aid to Bougainville should be tripled ahead of the referendum, to A$100 million (about PNGK 200M) per year. This would include providing A$40 million (about PNGK 80M) in budget supplementation and doubling the A$35 million (about PNGK 70M) currently spent on sectoral development support and the activities of contracted advisers.

In exploring the role of DFAT aid in Bougainville’s future economic development I will analyse aid policy and procurement processes in their socio-cultural, economic and political contexts. The socio-cultural element refers to Melanesian cultural values and practices. Political and economic aspects and post-conflict issues, will be considered as well as the problems that Bougainville encounters as a SIDS. The aim is to assess how these factors may have an influence on aid and Bougainville’s economic development.

The development issues and challenges for Bougainville can be explored from various perspectives. For this study I will limit the discussion of Bougainville’s development issues to two areas: Bougainville as a SIDS territory and post-conflict restoration development in the period from 1997 to – November 2014, when I completed my field work.
Bougainville as a small territory encounters development challenges common to other SIDS. According to Ghina (2003) the development issues and challenges of the SIDS have been on the international agenda since the early 1990s. Briguglio (1995), William and Kraay (2000), Wong (2011) and Perkins and Wei-Ning (2006) proposed that the issues related to the economic development of the SIDS are associated with five of their characteristics: smallness, remoteness, geographical dispersion, vulnerability to natural disasters (including conflicts), and a highly limited internal market (further elaborated below: chapter 2).

In this thesis the dimension of re-building refers to Bougainville’s economic development issues and the challenges of the post-conflict restoration after the devastation which resulted from the Panguna mine-related conflict between Bougainvilleans, BCL (Bougainville Copper Limited) and the PNG government (referred to above). This conflict led to massive destruction and deterioration of infrastructure, and had adverse social, economic and political consequences, which this study analyses before developing options for Bougainvillean reconstruction with the assistance of DFAT aid.

The overall objective of this study is to explore DFAT aid as an option for boosting Bougainville’s economic growth. The motive for prioritising economic development (apart from other socio-political imperatives) is based on the neo-liberal rationale that the tradeable goods sector will generate revenues for the conduct of social and political facets of development. This approach shapes the research question(s) of this thesis to be focused on exploring the type of DFAT aid need for Bougainville’s future economic development.
2. Research Objectives

The objective of this research is derived from its research question: What type of DFAT aid does Bougainville need for its economic development?

Sub research questions:

1. What are Bougainville’s major economic development options?
2. How is DFAT aid significant in Bougainville’s economic development?
3. What are the processes or criteria used in identifying and selecting aid-funded projects?
4. How can factors that affect aid-funded projects be addressed?
5. How can foreign aid resources be better utilized to facilitate Bougainville’s economic development outcomes?

As alluded to above, this study is focused on how DFAT aid can be used to secure Bougainville’s future economic development. Economic development generally means the policies and strategies designed to foster development in-order to increase living standards. Usually this measure of economic development growth is indicated by an increase in GDP (Gross Domestic Product) or per capita income (elaborated below).

For the purposes of this study economic development refers to the establishment of industries that could generate revenues for the ABG. This could involve exploiting Bougainville’s natural resources, such as marine resources, the agriculture sector and minerals. Marine resources include fisheries and sea-weed. The fish caught in Bougainville waters contribute a significant proportion of PNG’s total fish-stock for export (elaborated in chapter 3). Sea-weed farming is also taking place in the outer-atolls of the Carterets islands. A feasibility study for the extension of sea-weed
farming in other coastal areas of Bougainville is under-way (Autonomous Bougainville Government. Commerce Department 2014).

According to Oliver (1991) and Braithwaite et al. (2010) cocoa and copra were introduced during the colonial period, and so are seen as traditional agriculture cash crops by Bougainvilleans. The post-conflict rehabilitation cocoa programs (elaborated below: chapter 4) and development of high breed (clones) by CCI (Cocoa and Copra Institute), plus an improvement in pest and disease management techniques have boosted cocoa farming in Bougainville. Rice and coffee were more recently introduced. Small-scale rice production occurs on the south and west-coasts of Bougainville. Coffee seedlings and buds are currently being distributed to farmers for purposes of nursery development pending smallholder commercial planting. The ABG has proposed to develop an oil palm industry in Torokina district (discussed below: chapter 3) (Autonomous Bougainville Government. Commerce Department 2014).

There are also vast mineral resources on Bougainville; one example being the former Panguna mine which was operated by BCL, a subsidiary company of Rio Tinto Zinc Australia (referred to above). Furthermore, in 2012, the PNG government issued seven new exploration licences to mining companies. These are at Laluai river, Jaba-Toyo, Toyo-Kaverong, Sipuru, Pakia, Panguna, Kupei and Kieta, all of these in Central Bougainville. The potential for mining in Bougainville was further boosted by enactment of the ABG’s Mining laws in 2014 -15 (cf. chapter 3 below) (Autonomous Bougainville Government. Mining Department 2013).

Bougainville has various development needs, both as a SIDS territory and consequent upon the recent civil conflict. Analysis also indicated that Bougainville
has natural resources that can be exploited to pursue economic recovery and
growth. This background establishes a basis to explore the role of DFAT aid in
Bougainville’s future economic development. To contextualize this study I will
initially explore some socio-cultural aspects of Bougainville.

3. Brief history of Bougainville: culture and people

Bougainville (previously known as North Solomons) is one of the 20 provinces of
PNG. In 2005 it assumed a new political status as an autonomous region within
PNG. The change in Bougainville’s political status emerged from an armed conflict
(referred to above) which led to aspirations for secession from the rest of PNG to
secure a separate independent state. Bougainville is currently known as the
‘Autonomous Region of Bougainville’. This includes the mainland and many outer-
atolls islands. However, Bougainville specifically refers to the main island in the
eastern-most part of PNG (refer to Figure 1 below: Bougainville region indicated
with a red circle).

Figure 1: Bougainville Island in the western pacific region
According to Ogan (1991) Bougainville has some unique features that make it socially, culturally and even politically distinct from the rest of PNG. Bougainvilleans claim to be more aligned with the Solomon islanders to their immediate south. In fact Oliver (1991) argued that the Rorovana people (in central Bougainville) migrated from the Solomon Islands and settled in Bougainville in the 19th century. He also stated that there are some cultural and even genealogical linkages between some people in Buin district on the southern tip of Bougainville and those in the Shortlands, in Solomon Island’s Western province. This close tie leads to some security-related issues which indirectly affect development processes elaborated below in chapter 3.

1.3.1 The people and their culture

The people of Bougainville are Melanesians with the darkest (or blackest) skin among the people of PNG and even of most Pacific islanders. There is great internal diversity in various aspects of their cultures and tradition. Ogan (1991) acknowledged the complexity of the Bougainvilleans’ cultures by arguing that it is difficult to provide a tidy sketch in understanding them. He argued that neither language nor ecology can be used to understand and explain these cultures. But both, (language and ecology) remain important factors to be considered in explaining and understanding the cultural diversity of Bougainville.

Bougainvillean diversity is reflected in various ways, including the number of native languages (other than Pidgin, the national language of PNG) spoken throughout the island. In fact there is no consensus among scholars on the total number of local languages spoken in Bougainville.
According to articles, reports and books written by Ewin (2003), Ogan (1991), Jennings and Claxton (2013), Braithwaite et al. (2010) and Oliver (1991) the total number of languages is between 15 and 25.

Cultural diversity is also reflected in the marriage arrangements of matrilineages and patrilineages in various parts of Bougainville. The usual practise is that, in a matrilineal society residence is matri-local and vice-versa for patrilineal societies. In the matrilineal society the women own land and its resources and vice-versa for patrilineal groups. Matrilineal systems are more common in most parts of Bougainville except for Buin and Nissan Island (Braithwaite et al. 2010).

In Bougainville (like many other Melanesian societies) land is traditionally owned - as communal freehold - and people view land as source of life on which they undertake subsistence farming for food as well as cash cropping for income. According to Nanau (2011) a person’s claim to a piece of land is usually determined by his or her ancestral connections with the area concerned. Sukot (2008) states that portions of land are usually owned by a clan and not by individuals.

However, as Ogan (1991) noted, it is too simplistic to say that land is private property and usually owned by a clan. There are many factors that determine the distribution of land including kinship ties, marriage and other forms of exchange that profoundly affect rights to use land in various ways. According to Linnett (2009) and Gesch (2005), in the pre-colonial period the distribution of land was built into the socio-cultural practices and was inalienable, as opposed to seeing land as commodity which people can sell or lease for profit. Traditionally a portion of land is given to another clan in appreciation for some help received. For example, the
receiving clan might provide a pig during a mortuary feast held by the donor clan and be awarded by a gift of land. Land issues are important considerations in this study (discussed below chapter 3).

The arrival of foreigners (missionaries and colonisers) resulted in some of the land being alienated. Currently, about 323.01 kilometre square (3.7 percent) of land is alienated to the state, missions and private owners. Nevertheless, most of the land (about 97.3%) is customary freehold land tenure (Autonomous Bougainville Government. Department of Lands 2013).

1.3.2 Cultural Traits

There are various cultural traits among Bougainvilleans which are rooted in Melanesian-based social values and practises. One common aspect is the practise of nepotism, which is locally referred to as the wantok system. Literally wantok is a pidgin word meaning same language. However, according to Nanau (2011) wantok broadly refers to a relativist concept used to express patterns of relationships and networks that link people in families, clans, tribes, ethic language groupings, and regional localities and also with reference to provincial, national and sub-regional identities. The wantok system leads to situations where people make socio-economic and political decisions within the bounds of cultural obligations.

When a wantok is in power (especially in government and other organizations) he or she gives priority to his or her wantoks (inclusive of categories of wantoks referred to above) in dispensing goods and services as opposed to distributing these through a dispassionate needs-based bureaucratic process. Related to the wantok system is a ‘do-not-care’ attitude. This attitude refers to a situation where people
do things based on the principles of ‘as long as I benefit it’s alright, I do not care if my action(s) or decision(s) disadvantage others’. This was referred to by Nanau (2011) as a situation where an individual (or group) as wantoks gain support from family affiliations and make and enforce decisions that will benefit themselves. This wantok system could have a counter-productive effect on development processes (discussed below: chapter 4).

1.3.3 Leadership roles and practices

Traditionally leadership (culturally referred to as a paramount chieftaincy) is usually a birth right and inherited within a certain clan, usually by a male. The role of leaders was to make decisions over matters like land, feasts and even resolving conflicts that may arise between clans. However, with the changes of values resulting from adopting the practices of the modern world, which began with colonialism, there are certain leadership patterns that emerged as the colonial administrators attempted to bolster the traditional leadership system with political and administrative authority (Ogan 1991).

Nowadays leadership and decision-making takes into account modern education and knowledge. This means that, although there may be a ‘paramount chief’ in society the educated elite may have inputs into decision making related to modern world issues. This was reflected in the initial Panguna mine negotiations in the 1960s, where a then university student, the late Anthony Miriung, was heavily involved (Braithwaite et al. 2010).
1.3.4 Livelihood of the people

Generally the livelihood of Bougainvilleans living in local communities is sustained through subsistence farming. They make gardens usually in family units on their traditionally owned land. The food crops they plant include; kaukau, taro, yams, banana and vegetables. Most of these are for self-consumption or helping neighbours who do not have food. Any surplus is normally sold at local road-side markets or town markets (for those who can afford transport) to secure cash income (Braithwaite et al. 2010).

Wolfers (2007) noted that the overwhelming majority of the people grow much of their own food and try to participate in the cash economy through fishing, or growing and harvesting cocoa, copra and other crops. The monies from these activities are used to meet children’s school fees, charges for medical services, and to purchase, clothes, tools, kerosene and other goods from trade stores.

Given the above overview, the 1989-97 crisis severely affected Bougainvilleans’ livelihood. In fact most of the cash crops and the facilities used for their processing deteriorated. This resulted in many people resorting to alluvial mining when peace was restored in 1997. In times of need relatives working for government and private organizations financially supported needy family or clan members. Currently some small-scale businesses in rural areas are operated by locals to earn their living. Normally Bougainvilleans live in villages, usually in clan groups on their land. Each household usually comprises a husband and a wife or wives and their children. However, there are some cases where large extended families live together, including, grandparents and relatives of wives or husbands (Braithwaite et al. 2010).

Figure 2, below shows a demographic analysis of households in Bougainville.
Nowadays more people are migrating into towns, especially Buka in the north, which is currently the capital of Bougainville. Others are also moving to Arawa town in central Bougainville, which was the capital prior to the crisis. Within the rural districts there is also a movement of people, especially to areas where there are economic activities such as alluvial mining. One of the main reasons for such internal-migrations is to access cash-earning activities.

Below are figures 3 and 4 that illustrate population changes in districts between the years, 2006 and 2011.
Figure 3: Bougainville’s population distribution by districts in 2006


Figure 4: Bougainville’s population by districts in 2011

Source: PNG National Statistical Office (2011)
Figures 3 and 4 show that there was a change in the population distribution due to internal migrations. Generally the districts with urban centres (Buka, Arawa and Buin) have increased in population while those in outer areas have decreased (particularly evident in Panguna, Nissan, Bana and Siwai districts). Buka district (hosting Bougainville’s HQ) has the highest population. However, some districts including Atolls, Wakunai and Selau/Suir did not experience significant population changes. Probably the districts closer to urban centres (Wakunai to Arawa town and Selau/Suir to Buka town) have no indications of urban-drift, probably because people can easily access urban goods and services without any need to migrate. The Carterets Atolls people could have been prevented from urban-drift by development of sea-weed in their district (cf. below: chapter 3) from which they earn income for their living.

The rural-urban drift indicates people migrating to towns of other districts where there is better accessibility to goods and services, and even opportunities for earning income. The analysis of population is important, given that government and donor agencies usually consider such data in making decisions over allocation of resources for the purposes of development. The rural-urban migration experienced in Bougainville is a common phenomenon in developing countries and is very evident among the Pacific island nations (ABC Radio Australia 2012). Some of these features are common to SIDS, an area that is further explored below (chapter 2).

The era of Australian colonial administration over Bougainville has a continuing influence over aid and development issues, as alluded to above. This serves as basis to explore the effect of the Australian colonial administration, aid and development issues on Bougainville.
4. Australian colonial administration and development in Bougainville

From 1884 to 1914 Bougainville was part of German New Guinea. After World War I Australia exercised a League of Nations mandate over ex-German New Guinea. Bougainville was effectively administered as part of Papua. This lasted until PNG got its independence in 1975 (Braithwaite et al. 2010). According to Sack (2005) and Oliver (1991), Bougainville was ruled as one of seven districts in Papua.

The Bougainville region (the mainland together with Buka Island and the atoll islands) constituted one district. The first Australian colonial post was established on Sohano Island, in the north and later moved to Kieta, in central Bougainville. There were other sub-districts as well as administrative centres, then referred to as patrol posts. By 1920 there was a colonial sub-district established in Buin, south Bougainville. In the 1960s the district capital was relocated to Arawa in central Bougainville (Oliver 1991).

For much of Australian colonial history, Bougainville was ruled by administrators referred to as *kiaps* (Oliver 1991). The Australian colonial administration retained the practice of the Germans, who used traditional leaders known as (*luluai*). The Australians rebadged them as *kukera* or ‘hatmen’ as they were issued with police hats and empowered to enforce laws in their villages. These men were given a badge, a hat and a silver-headed stick and they retained 10 per cent of the colonial taxes they collected. Their responsibilities included settling disputes, punishing law breakers, ensuring hygienic practices and collecting tax. They were accountable to
the *kiaps* who were then usually white Australians (Braithwaite et al. 2010). These are some examples of earliest Australian assistance to Bougainville’s development.

Oliver (1991) claims that between 1906 and 1964 there was little governmental action in areas of social economic and political development. This was due to many factors, especially the spill-over effects of the Great Depression and World War II. The main economic activity during this early post-war period was copra production from the coconut plantations established by the Germans. A few Australian companies and entrepreneurs also set up business in this period. These included Burns Philip, which established Buka plantation and trading company. The other successful entrepreneur was Walter Lucas, who established eight thousand hectares of coconut plantations in north Bougainville (Braithwaite et al. 2010).

1.4.1 The Australian colonial administration in Bougainville: 1960s to 1975

Schneider (2012) describes colonial control, Christian missions and foreign-owned plantations as increasingly important from the late 19th and throughout the 20th century. Various Bougainvillean communities welcomed, co-operated with or resisted foreign intruders (first the Germans, then the Australians and then, briefly, the Japanese before the Australians returned). Among those who resisted were some parts of central Bougainville which remained effectively outside of the colonial control until the 1950s. For example, in the early 1960s, people in the Kieta area, told a UN visiting mission to the Trust Territory of New Guinea that they wanted Australia to give up its responsibility as administering power and be replaced by the USA.
In the 1960s there were a number of dramatic confrontations when police and other government officials accompanied prospectors, surveyors and other employees of companies interested in developing the huge low-grade copper deposit at Panguna.

Opposition to foreign rule over Bougainville was also experienced in parts of north Bougainville. For example the members of the Hahalis welfare society (a local ‘cargo cult’ group on Buka Island) refused to pay the annual head-tax to the colonial administration (Schneider 2012). These are some earliest incidences of behaviour that was counter-productive to orthodox development processes.

**1.4.2 Development of the Panguna mine**

In 1964, an Australian geologist discovered huge copper, gold and silver deposits in the Panguna mountains of the south east of Bougainville. This discovery eventually resulted in establishment of the Panguna mine. Production began in 1972 and made Bougainville host to one of the worlds’ biggest copper mines (Braithwaite et al. 2010). This was initially welcomed: Havini (1999) argued that Australia colonization was an opportunity to make Bougainville’s minerals its economic base.

In 1967 the BCA (Bougainville Copper Agreement) was signed between the representatives of the landowners, BCL and the Australian colonial government (May 2009). The landowner representatives were elected leaders from the major areas to be affected by the mine, including the Panguna mine site, Arawa town, Loloho port, the Port-mine access road, as well as the upper tailings and lower tailings deposit areas. Included in the BCA was the royalty paid to the landowners.
for destruction of property and the environment during the establishment and production stages.

According to Braithwaite et al. (2010), May (2009), and Havini (1999), the mine share-holding comprised: BCL 80 per cent, and the PNG National government 20 per cent. Bougainvillians received only 1.25 per cent share of the total profit.

According to Filer et al. (2012) the Panguna mine’s production contributed significantly to PNG mineral exports, which accounted for about 60 per cent of all PNG’s exports. The mine was originally operated under colonial government ordinances (laws) which dictated that “all mineral rights belong to the crown, which then referred to the ‘the Australian colonial government’” (Ewin 2003).

After the establishment of the Panguna mine, the Australian colonial government, in collaboration with BCL, established some important infrastructure. This included Aropa airport, which was used for providing support to the mine workers (Oliver 1991). Arawa township was the residential area for the mine workers, Loloho became the port where minerals were exported and equipment needed for the mine imported. Arawa hospital was established to cater for the mine workers and the public. These facilities were established as support infrastructure for the effective operation of the mine. All of this infrastructure was destroyed during the 1989-97 crisis (Ewin 2003).

In addition BCL funded tertiary scholarships for indigenous students, and also funded agricultural extension programs and provided capital for Bougainvilllean
business start-ups through a business arm referred to as the BDC (Bougainville Development Corporation) (Braithwaite et al. 2010).

According to Havini (1999) in the late 1960s the mine ignited the first stirrings of the independence movement. In the late 1960s people began to express their grievances against the Australian colonial government over the handling of the Panguna mine. In 1972, Bougainville was granted some degree of autonomy by the PNG government but this did not end the secessionist movement.

Eventually in May 1975, an Interim Bougainville Provincial Government was established, through which a unilateral declaration of Bougainville’s independence as the Republic of North Solomons took place on 1 September 1975, ahead of PNG’s own independence on 16 September 1975. However, the UN did not recognise this declaration, so Bougainville remained within PNG. Australian colonial administration of Bougainville formally ended after PNG got its independence (Braithwaite et al. 2010). This is some of the background to Bougainville and its development issues under the Australian colonial administration.

1.4.3 Bougainville under PNG: 1976 - 2005

For the remainder of the 1970s and into the early 1980s, relations between Bougainville and PNG remained tense, but relatively peaceful (Oliver 1991). In 1976 Bougainville was granted higher autonomy with its own ‘Provincial government’. Eventually other parts of PNG were also given the same type of government. Under this arrangement there was a Provincial Assembly headed by a Premier and in which the elected members represented the people. The late Alexis Sarei was the first Premier of the North Solomon’s Provincial Government. During his premiership
the disputes related to the Panguna mine were re-emerging in the 1980s (Braithwaite et al. 2010). The two subsequent Premiers were, Leo Hannet in 1983-85 and, after 1985, the late Joseph Kabui, who came from Toyo village within the Panguna area (Linnett 2009).

During the Kabui government the grievances against the deleterious impacts of mining were gaining momentum. Bougainville was experiencing significant social changes, not all of which were directly due to the mine. For example, there were also anti-social and criminal activities, including prostitution, rape and assault emerging, indirectly associated with mining. These were unacceptable within the traditional customs and values of Bougainvilleans (Linnett 2009).

As Linnett (2009) noted, from the outset mining-related activities clashed with the traditional values of Bougainville. In particular there was the issue of property holding, land rights and revenue sharing. After PNG’s independence the new constitution limited the private ownership of land to just 6 feet below the soil. In effect this meant that the subsurface (below six feet) mineral rights belonged to the state (Braithwaite et al. 2010). This was consistent with British common law practice, which had been imported via the Australian colonial administration.

This law challenged the Bougainvillean understanding of land ownership. They believe that their land ownership and rights included minerals in the ground and not just the land itself. Given this, the development of mining was in conflict with the cultural values and practices of Bougainvilleans. As noted above, traditionally land in Bougainville had belonged to numerous patrilineal or matrilineal clan lineages. So the right to exploit the land was shared by the members of these clans.
The idea that sub-surface land could be leased to outsiders (in this case BCL) for extended periods of times was not a part of this tradition (Linnett 2009).

These grievances, together with the argument that the Panguna mine profits were not benefiting the people of Bougainville and that the mining activities were seriously damaging the environment, formed the basis of the subsequent crisis (Havini 1999). In November of 1988 an organised group of traditional landowners (later known as the BRA), led by Francis Ona were sabotaging BCL properties and demanding the re-negotiation of the BCA (Linnett 2009).

In 1989 the PNG Government responded by sending in the police riot squad, followed by the PNGDF (Papua New Guinea Defence Force). Their heavy-handed tactics, extra-judicial killings, and other human rights abuses ignited a violent guerrilla war on Bougainville. The fight to close the mine escalated into a struggle for self-determination as the local population turned against the PNG Government. On May 17, 1990, Bougainville rebel leaders, led by late Francis Ona and Joseph Kabui declared the independence of Bougainville (Jennings & Claxton 2013). This led to the establishment of the BIG (Bougainville Interim Government) by former, North Solomons Provincial Government leaders (Ewin 2003).

In April 1990 the PNGDF withdrew from mainland Bougainville after facing heavy causalities caused by confrontations with the BRAs. However in April 1991 the PNGDF, taking advantage of the hardships caused by their blockade, re-invaded Bougainville, but again with very little success (Ewin 2003). These events provide
the background of the cause of the widespread destruction of infrastructure and services.

Dinnen, May and Regan (1997) stated that the inability either to establish peace or for the PNGDF to win the war in Bougainville was burdensome to the PNG government. Given this, in 1997 the (then) PNG Prime Minister, Sir Julius Chan, announced that his government had hired Sandline, a South African mercenary company, to wipe out the BRA. This initiative was later withdrawn due to international and domestic opposition (Ewin 2003).

After the Sandline incident, which caused political instability and the Prime Minister to be over-thrown, Australia and NZ became involved in finding a lasting solution to the Bougainville crisis. These two countries facilitated peace negotiations in Burnham, NZ in October 1997. By 1989 a complete cease-fire was signed in the Lincoln Agreement in NZ, which ended the armed conflict. This series of negotiations led to the signing of the Margini Charter, in November 1994. This paved the way for the establishment of the BTG (Bougainville Transitional Government), which committed the PNG government to restore services on the island. A multi-national unarmed PMG (Peace Monitoring Group) was formed by the Pacific island states and sent to Bougainville to monitor the cease fire (Jennings & Claxton 2013). According to Hegarty and Regan (2006) the PMG was made up of military personnel from different states in the Pacific under the overall command Australian officers. The PMG initially comprised about 300 personnel, including 90 peace monitors and about 200 support personnel (about 240-250 of the total were Australians). The New Zealand Defence force provided 30 people and Fiji and
Vanuatu 15 each. Australia also supplied equipment for the operation, including three helicopters, a dedicated landing craft, small boats and vehicles.

The PMG also initiated and supervised a weapons disposal program, which was a condition for the withdrawal of all PNGDF personnel from Bougainville. The PMG withdrew from Bougainville in 1998, after successfully guiding the Island through a disarmament process, the restoration of essential services and the establishment of a civil administration body, the Bougainville Interim Government (Kenny 2002). The PMG was a significant DFAT assistance to Bougainville’s post-conflict redevelopment and provided a conducive environment for the re-establishment of civil society.

In January 2001 Bougainville leaders and the PNG government reached an agreement on political autonomy and independence for Bougainville. This will allow Bougainville to hold a democratic referendum of which one option available is for the Bougainville people to create an independent state (referred to above). To formalise these arrangements, two important documents were jointly developed, the BPA and the Bougainville constitution. The BPA was signed at Arawa on the 30 August 2001 by 33 signatories from PNG government delegates and Bougainville leaders (Bougainville Peace Agreement 2001).

One aspect that complicated post-conflict restoration development, especially law and order related issues, was the fragmentation of Bougainvilleans into armed factional groupings. For example, Francis Ona, the principal founder of the BRA, and some of the former combatants observed the cease-fire (referred to above) but declined to join in the formation of the ABG. They wanted full independence from
PNG without going through the autonomy arrangements (outlined in various sections of the BPA). This group, formerly referred to as ‘Mekamui’ (meaning mysterious place), continue to remain effectively outside of the ABG structures and governance systems (Braithwaite et al. 2010).

In 2014 the disunity among Bougainvillians was widened when Noah Musignko the founder of ‘U Vistract’, a failed money scheme, joined the late Francis Ona’s group. Later in 2005 Musignko proclaimed himself as a king and established his own kingdom guarded by armed former BRAs (Wallis 2012).

Whatever the result of the referendum, Bougainville needs to re-establish its own economy, allow stable government to maintain peace building, and re-establish law and order, as well as convince the world that Bougainville can gain independence. The establishment of the ABG and its development processes are explored in the following discussion.

5. Establishment of the ABG and development issues

Consistent with implementing the BPA, on the 15th May 2005, elections were held in Bougainville. The first ABG was led by (the late) President Joseph Kabui, as the President and a cabinet chosen from 39 elected Members of Parliament (Wolfers 2007). Under the autonomy arrangements Bougainville legally remains part of PNG but is now governed by an autonomous Bougainvillean government under its own constitution, arrangements ratified by the PNG government in 2004.

The ABG’s political and legal basis rests on three main pillars of the BPA; autonomy, a referendum and weapons disposal. Autonomy and the referendum redefine the
basis of political arrangements in Bougainville and PNG as a whole by providing the basis for constitutional guarantees of:

First, in relation to autonomy, the ABG will be able to draw down a wide range of significant powers and functions from the PNG government. This process will depend on the resources and capacity of the ABG. This will allow implementation of the guaranteed sources of revenue for the ABG and the establishment of its own institutions, as specified under the Bougainville Constitution.

Second, is a referendum in which Bougainvilleans will be able to vote on Bougainville’s political future 10 to 15 years after the establishment of the ABG. The conduct of the referendum will be dependent on certain conditions regarding weapons disposal, good governance and fiscal-self-reliance. One option available in the referendum choices is independence for Bougainville as a separate state (Bougainville Peace Agreement 2001).

The referendum pillar has provisions linked to weapons disposal, which was agreed to be implemented through an agreed weapons disposal plan stipulated in the BPA part e. The autonomy and referendum provisions were enacted in the national constitutional law; so they can only be changed if both the PNG National parliament and the ABG legislature agrees (Wolfers 2007). The BPA provisions are important considerations for this study, given they serve as road-map for Bougainville’s development processes.

In 2013 the BPA was reviewed by an independent committee led by Naihuwo Ahai, a Bougainvillean who works with the DFAT aid agency, academics from the University of PNG and others, including representatives of DFAT aid-funded advisers to ABG. Their findings were not available by November 2014 when data for this
The transfer of powers and functions from the PNG government to the ABG is stipulated in section 7 (article a) of the BPA. This states that ‘the autonomous Bougainville government will transfer powers and functions from the PNG government as institutional capacity building’. This process involves the ABG notifying the PNG government 12 months in advance with, a formal request for transfer of the selected powers (Bougainville Peace Agreement 2001).

In June of 2006 the ABG issued the first request for transfer of mining powers and functions from the PNG government at a JSB (Joint Supervisory Body) meeting at Alotau, Milne Bay Province. The JSB delegation comprised leaders (politicians and bureaucrats) from the ABG and PNG governments. This group is mandated by the BPA (articles 263-264) to oversee development issues in autonomy implementation and resolve any disputes that may arise between the PNG government and the ABG (Bougainville Peace Agreement 2001).

After the death of Kabui in 2009, James Tanis a former secretary to the BRA became the President through a by-election. In 2010, under the Tanis government, five symbolic powers; liquor, time zone, youth and women and public holidays were assumed by the ABG. The Tanis government established the ABG’s Peace Division, which was focused on reducing post-crisis cases of in-fighting among Bougainvilleans. This was a significant contribution to improving the law and order situation in many parts of Bougainville. To some extent this promoted development by creating a conducive environment for economic and social recovery (Autonomous Bougainville Government. Autonomy Division 2014).
1.5.1 The second ABG Government: 2010-June 2015

In the ABG’s 2010 general elections John Momis became the President of Bougainville for a five year term until 2015 June, when General Elections were next held. The activities on the transfer of powers and functions (referred to above) were continued under the Momis government. By 2011 there were nine additional Memoranda of Understanding signed between PNG and the ABG. The MOUs contained the procedures and steps involved in transferring powers and functions (as referred to above). The MOUs for the economic sector include Primary Industries, Fisheries and Forestry. MOUs for other departments and statutory bodies, including Community development are still in progress.

In March of 2014 the ABG’s House of Representatives enacted two important laws: the Bougainville Public Service Management Act and the Tenders and Contracts Management Act. The former was aimed to enable the ABG to improve the management of its public service and the later was aimed to enable effective management of development, particularly procurement of contracts (Autonomous Bougainville Government. Autonomy Division 2014).

The Momis government also initiated some economic development HIPs (High Impact Projects) aimed to generate revenues for the ABG. Among these is the Torokina Oil Palm project, which a PNG-Chinese company (Hakau Investment Ltd) had begun to develop before being stalled by land issues (Torokina Oil Palm Project Report 2011). There were also various agriculture sector developments, including a 10 year cocoa development plan, that are still in progress (cf. chapter 3 below).
Other developments facilitated by the ABG include service delivery sectors such as communications, where, Digicel a foreign communication company, established a communication system for mobile phones throughout Bougainville. This enables effective communication and contributes to enhancing the effectiveness and efficiency of both the public and private sectors.

In 2008 services to Arawa, began to be restored, and by June 2012 the Bank of the South Pacific (BSP) opened a branch there. Postal services were also restored in the same period. In 2011 PNG Power (a statutory body of the PNG government which provides electricity throughout PNG) re-established its operations in Arawa and Buin townships. The re-opening of the Aropa airport (which had been closed for 24 years) on 12 February 2015 is another step towards restoring services to Bougainville (Autonomous Bougainville Government. Autonomy Division 2014).

The above instances are some highlights of the progress in Bougainville’s recent development. There are other aspects of socio-economic and political development taking place in Bougainville that are not mentioned here. One area that is critical to Bougainville’s future development is its ability to generate revenues for sustaining its governance institutions. In an attempt to demonstrate the urgency for Bougainville’s economic development the ABG’s financial situation is briefly outlined below.

1.5.2 Current financial situation of the ABG

The ABG needs about PNGK 89 million (about A$ 44.5M) annually to perform and sustain its operations in delivering goods and services to the Bougainville people.
However, documentation of its internal revenue shows that the ABG is in a precarious financial situation, given that it only generates about PNGK 12 million (about A$6M) of revenue every year. This is sourced mainly from taxes collected from locally-owned businesses and from the ABG’s business arms, particularly taxes on sea-weed exports (cf. chapter 3) (Autonomous Bougainville Government. Commerce Department 2014).

The remaining funding comes from two main sources. First is the PNG Government’s grants of 15 PNGK million (about A$ 7.5M), which is an agreed provision in the BPA. There is also the SIF (Special Intervention Fund) of PNGK 500 million (about A$ 250M), which is intended for High Impact Projects and scheduled to be distributed within a period of only five years. Second are aid donors’ counter-funding (this includes UN, NZAid, EU, JICA and DFAT aid). Of all the development grants (both by government and non-government donors) DFAT provides the biggest amount (in 2014 the aid amount was PNGK 75 million (A$ 37.5M). If after the referendum, Bougainville assumes full independence, this will effectively mean the cessation of funding from the PNG government. The ABG will need to tap into revenue generation industries to close the annual financial gap of about PNGK 77 million (about A$38.5M).

The fact that DFAT aid expenditure is the highest among all development funding sources gives significance and relevance to this study to explore ways such resources can be better utilized for Bougainville’s future development. In executing this study mixed research methods were employed to collect data.
6. Research methodology and thesis organization

1.6.1 Description of the research methods

Mixed research methods; document analysis and interviews were used to collect data for this study. The data collected and analysed is used to address the research questions (mentioned above) of this study.

Secondary sources:

This method involved document analysis which, according to Heffernan (2001) is a form of qualitative research in which documents are interpreted by the researcher to give meaning around a particular study area. Bowen (2009) also stated that this method describes the nature and forms of documents, outlines the advantages and limitations of documents, and offers specific examples of the use of documents in the research process. There are three primary types of documents:

Initially I accessed public records, which included the official, ongoing records of various organizations’ activities (this included mission statements, annual reports, policy manuals and strategic plans). Secondly, I used personal documents: first-person accounts of an individual’s experiences, and beliefs (including scrapbooks, blogs, incident reports, reflections or journals, and newspapers).

Finally I used physical evidence, as found within the study setting (these included flyers, posters, handbooks and training materials). Some specific applications of document analysis method involved, content, discourse, and interpretive analyses (cf. Heffernan 2001).

This methodology was used to analyse, official records of DFAT aid policies, the type and value of aid, plus the project procurement processes that are used for
managing aid projects. The ABG’s official economic development policies: the BPA, the Corporate Plan, the Strategic Action Plan and the Medium Term Development Plan, and other records of natural resources for economic development were also analysed. Documents accessed were related to the period from 2005 (establishment of the ABG) to November 2014 (the end of my fieldwork).

The records of Bougainville’s agriculture-related economic development sectors were also analysed. Details of marine resources (species and quantity) of fish-stocks that come from Bougainville waters (as a proportion of PNG’s fish-stock for export) were collected from the NFA (National Fisheries Authority: a statutory body of the PNG government). Estimation of the viability and production potential for sea-weed farming was determined from studies held by the ABG’s agencies. Data from other primary industries, such as coffee, oil palm, cocoa and copra, were examined before I made a final decision to concentrate on the cocoa industry. That choice was made during fieldwork, which enabled me to collect detailed data related to development of the cocoa industry. Data collection for the case study on the cocoa industry included, analysing documents from the ABG’s DPI, CCI, the PNG Cocoa Board, and the records of exporters.

Primary sources

This method involves interviews. I am an employee of the ABG, whose policies and officers’ knowledge or ideas were a key component of my research. Some of my colleagues were interviewed, so I declared that I was aware of the potential for conflict of interest and committed to be a neutral researcher during the interviews and to maintain confidentiality.
Interviews were used as means to collect primary data, given that they seek to discern the meanings of central themes of what the respondents say. This method, more exploratory in nature, allows for more flexibility in seeking information (cf. Tolich & Carl 2011). Among other methods of interviewing, the standardized, open-ended method was used, given that its objectives and the design are similar to that of this study. This is similar to the semi-structured interview, where the interviewer generally has a framework of themes to be explored (Walliman 2011). It also allows, a more fluid conversation, which permits two-way communication where the interviewer and interviewee can ask each other questions (Doyle 2014).

The recruitment of the interviewees was targeted on key informants with experience and an informed understanding of the issues and challenges of DFAT aid and development in Bougainville. The recruitment of DFAT officials’ included representatives from DFAT’s Bougainville office, aid procurement advisers, Bougainville’s GIF projects management office and the PMU (Project Management Unit) adviser. The ABG official interviewees included representatives from the Planning and Aid coordination Division, the Commerce and Investments Department, the Revenue and Taxation office, the Department of Technical Services and the DPI Department.

Additional respondents (apart from the officials above) were recruited through a ‘snowball sampling’ research method, where respondents recommend others whom they thought had the characteristics and knowledge relevant to the issues being investigated in this research. The utilization of the snowball sampling method enables identifying the resources networks within a community and selecting those
people best suited for the needs of a project (Patton 1990). In this case, the DFAT and ABG officials’ were asked to recommend other potential interviewees from other organizations or from the general public. This method allowed me to secure views and information from a representative portion of the informed public. The semi-structured interview method complemented the ‘snowball’ selection system.

The focus of the interviews was on exploring issues and challenges that are related to aid-driven development processes. It included how coordination, monitoring and evaluation in implementing aid-funded projects is conducted. Similarly, this standardized, open-ended interview approach was intended to ensure that the same general areas of information were collected from each interviewee. It provided more focus and allowed a degree of freedom and adaptability in getting the information from the interviewees (cf. Walliman 2011).

A set of questions were developed and used as guides during the interviews. However, this did not restrain interviewees from raising other issues related to DFAT aid and economic development in Bougainville. Given that the targeted participants were socio-administrative elites, the main language used was English. Alternatively, Pidgin (PNG’s national language) was used for some participants who were more comfortable with it to explain issues. Data collection for the case study on the cocoa industry also involved Interviews with farmers, DPI officers, export officers and exporters.

A human ethics clearance no H14061 was secured through applications to Charles Darwin University Ethics Committee to conduct interviews for this study.
Interview protocols and data management

I made requests through respective offices to make appointments for interviews. Where necessary a letter of request was sent to the intended respondents inviting them to be interviewed.

The time and venue was decided in consultation with the interviewees. Follow up and confirmation of interview schedules was done through emails and phone calls. The time allocated for each interview was approximately 30-40 minutes per respondent. This was extended when individuals proved particularly helpful. During the interview I transcribed the information given by interviewees on paper and later entered these notes into my laptop and to my external hard drive. Data was recorded separately for three different groups: DFAT officials, ABG officials and the various cocoa dealers, including DPI and export officers, farmers and exporters.

Case study:

In this thesis I will use a case study to explore the potential of the cocoa industry to boost the economic growth of Bougainville by utilising DFAT aid resources. This method flows from a rationale, proposed by Jones (2013), that the case study allows a researcher to explore a research area in a more detailed manner than is possible with other more general research methods. A case study is a systematic inquiry into an event or a set of related events which aims to describe and explain a phenomenon of interest or a particular situation (Zucker 2009). It is a method used to narrow down a very broad field of research into one manageable subject. The decision to focus the case study on the development of cocoa industry was based on the research findings and consultations with my supervisors (one of whom had
previously conducted research on the industry in West Africa and Misima in PNG). The decision criteria were based on:

- Consistency with Bougainville government development and DFAT aid policies.
- Production capacity and any constraints upon the ability to produce a sufficient amount for the local market and export.
- Demand and market indicators for consumption and export.
- Competitiveness in the national and regional (Pacific) markets.
- The extent of development of the supply chain from production to export.

In data analysis, some interview respondents were quoted within texts in relevant areas of this thesis. The other data was summarised into categories of themes in three separate sectors for; DFAT officials, ABG officials and for case study interviewees (the cocoa dealers: referred to above). These were converted into percentages (displayed in pie charts and tables in various chapters) and used to support my arguments in relevant areas of this study.

1.6.2 Thesis organization

To explore the role of DFAT aid in Bougainville’s future economic development, the thesis was organized into six chapters. The organization of chapters is aimed at making the flow of arguments sequential and coherent in a way that each chapter creates the basis for the subsequent chapters.

Chapter one is an introduction: presenting the research topic and the intended objectives and a brief history of Bougainville from the colonial period to present. The background of Bougainville puts this study into context, by way of
understanding the factors and issues that may have a continuing influence on Bougainville’s aid relationship and development. In particular, the discussions on people and their livelihood were aimed to explore the socio-cultural attributes that can affect development processes.

This chapter also gives an overview of Bougainville’s development progress and needs, in particular the difficult financial situation for the ABG, where there is a large gap between the high expenditure and low revenue that necessitates economic growth in order to grow revenue capacity. In mapping out the options available, DFAT aid is selected as most appropriate, given that it is the largest financial contributor to the ABG budget.

Chapter two deals with the literature on economic development in general and as particularly related to aid-driven development. Analysis also covered factors that lead to under-development in the third world developing states, especially in the SIDS. This is aimed to explore issues and challenges related to economic development. Such information is relevant for this study to understand the issues that both affect and enhance economic development processes in third world developing states and territories which are similar to Bougainville. This will also throw light on how obstacles to economic development are currently dealt with.

Chapter three analyses Bougainville as a micro-state in the Pacific region. This is aimed to explore the factors that hinder the development of Bougainville as a SIDS. Discussions will cover both the physical aspects (geographical issues) and the policies level of issues within Bougainville and in relation to other states. Factors within Bougainville include those that facilitate economic development, such as
land and infrastructure. Factors in relation to other states particularly pertains to its autonomous government status, where some sovereign powers needed for development purposes are still retained by the PNG National Government.

This chapter also give an overview of the resources of Bougainville that can potentially be exploited for the purposes of achieving economic development and growth. The enumeration of these resources also serves as basis to argue the Bougainville has the potential for economic development. The exploitation or development of some of these natural resources are in progress while others are still at the initial planning stages.

Chapter four deals with the issues and challenges encountered by DFAT aid-driven development in Bougainville. It involves analysing the current aid policy approaches used for procurement processes, particularly the selection criteria for aid-funded projects. This involves documentary analysis to assess the consistency between DFAT aid policy priorities and the ABG’s development objectives. This was to assess whether aid resources are allocated for the ABG’s development needs, or allocated to development areas consistent with DFAT aid preferences.

The discussion also includes analysing the management practices (coordination, monitoring and evaluation) used for implementation of aid-funded projects. This is aimed to explore factors that affect aid-driven development in Bougainville. In investigating the factors that affect aid and development, both ABG and DFAT policies and management practices will be assessed. Some examples of both
effective and ineffective aid projects will be discussed to further investigate factors that affect aid-driven development.

Chapter five deals with the case study on cocoa development. This is to refine recommendations as to how DFAT aid can be better utilized for Bougainville’s future economic development. This is demonstrated by developing a road-map of the stages involved in cocoa farming, beginning from soil study to export of dried cocoa beans. In this road-map of cocoa production stages, various problems that affect quality, quantity and even profits in cocoa production will be identified, such as the lack of knowledge or skill in cocoa farming or processing wet beans.

These problems indicate where DFAT aid resources should to be used to enhance the cocoa industry. The implementation of programs to address the problems of cocoa production will be recommended consistent with the effective aid management principles (outlined in chapter 2). Briefly this should be done in consultation with all stakeholders involved in the cocoa industry. This will ensure that aid resources are allocated to areas where they are actually needed to boost cocoa production.

Finally, in chapter six, the conclusion, all the findings are summarised. This highlights the overall rationale to create and improve income generation opportunities for Bougainville’s people and simultaneously to boost its economic development.
7. Summary

Bougainville is an autonomous government of PNG located north-east of Australia. The inhabitants are Melanesians, who live in societies still dominated by their “traditional” culture, with minimal effects from “Western” culture. The influences of their cultural values and practices are reflected in some aspects of Bougainvilleans’ attitudes and behaviour, where socio-economic and political decisions are made with cultural considerations paramount, as well as the way they perceive valuable capital assets like land.

In 2005 Bougainville assumed the political status of an autonomous region of PNG. This followed a 10 year conflict over Panguna mine-related issues of inequality in benefit sharing and environmental destruction. Bougainville is struggling to revive and restore all its infrastructure, social and economic stability and political vitality, all of which were almost destroyed during the 1990s crisis. Financially Bougainville is in a very difficult position, with a heavy reliance for its development budget on the PNG Government’s grant and supplementary recurrent funding from donor agencies, especially DFAT. A referendum approaching before 2020 – if Bougainville chooses independence - could mean the cessation of grants from the PNG government. This background serves as the basis to argue that Bougainville needs immediately to develop strategies to improve its economic growth.

This study explores aid-driven development as an option for Bougainville’s future economic development growth. As shown above DFAT aid is the largest single contributor to the ABG’s revenue. So is necessarily central to Bougainville’s economic recovery. Hence, this thesis explores and focuses upon the role of DFAT aid in Bougainville’s future development as a Small Island Developing territory.
Chapter 2:

Literature Review: Issues in economic development and foreign aid

1. Introduction

Development studies is a multi-disciplinary subject which generally studies growth or betterment, both measurable and non-measurable. Many development academics and practitioners have highlighted different aspects of development as a concept and a contemporary phenomenon.

The physical and natural sciences (biology, physics or chemistry) view development in terms of the advancement of technology, techniques and skills that enables faster and more accurate results (Haynes 2008). For example, the invention of advanced communication mediums (internet and mobile telecommunications) is a significant technological development compared to the early ways of communication (such as land-based postal mails) (Katar 2009).

Economic development refers generally to advancement or improvement in deliverable terms. In other words there are observable (or measurable) outputs that serve as indicators of development (and under-development). Examples of such indicators are increase in GDP and per capita income. The lack of these features generally reflects under-development. According to Makuwira (2006), for decades
the definition of 'economic development' has been the subject of heated debate, particularly in relation to the alleviation of poverty. This is part of a growing inquiry into how the process of economic development ultimately affects the intended beneficiaries.

Haynes (2008) and Loh (2013) noted that the specific field of economic development studies emerged in the second half of the 20th century with a primary focus on addressing development challenges that resulted from post-World War II decolonization. Decolonization led to the creation of ‘underdeveloped states’ in many parts of the globe. Poor ex-colonies in Africa, Asia, the Caribbean and the Pacific created the need for development. Oslington (1993) claimed that one of the most interesting and exciting developments during the late 20th century was the emergence of development economics as a separate discipline.

Hobbs (1980) argued that economic development is a prevailing ideology which requires economic expansion that results from the exploitation of natural resources. It involves certain prescribed forms of organizations and continuing advancement in technology. From an organizational point of view development has been accompanied by increasing levels of complexity, specialization, concentration of power, and interdependency between these phenomena.

Given this overview the definition of economic development is centred around various activities performed to directly or indirectly increase growth of the GDP and per capita income of a state or territory. Now I turn to defining and discussing models of economic development for more clarifications.
2. Economic development: definition and models

Generally economic development focuses upon the economic wealth of countries, regions or communities: growth for the well-being of their inhabitants. From a policy perspective, economic development can be defined as efforts that seek to improve the economic well-being and quality of people’s life in communities by creating and/or retaining jobs and enterprises, and improving their access to health, education, communications, etc. “Economic growth,” refers to the increase of a specific measure, such as real national income, GDP, or per capita income. National income or product is commonly expressed in terms of a measure of the aggregate value-added output of the domestic economy called GDP. When the GDP of a nation rises economists refer to it as economic growth (Salmon Valley Business Innovation Center 2011).

By contrast Sumner and Tribe (2008) see ‘economic development’ as a more complex and ambiguous concept, which is contested both theoretically and in terms of its effect on the population. They argued that recently it has taken on the limited meaning of the practice of development agencies, especially towards reducing poverty. Another perspective on ‘economic development’ can be seen as some vision or measure of ‘progressive change’ that relates it to ‘performance assessment’. This view is narrower in definition and is technocratic or instrumental.

According to Rapley (2004) economic development was understood to mean rising living standards, which would manifest themselves in rising incomes (growth), which in turn would translate into improved health, nutrition and education. Some theorists used statistics as indicators to measure economic development. In this
regard the study of development was initially based on the impact of changes in GDP (Loh 2013).

This brief overview indicates the contested definition of economic development. There are also various dimensions of development that are focused on specific areas and problems. Among these are sustainable development, rural development, post-conflict development and endogenous development.

2.2.1 Sustainable economic development

According to Katar (2009) sustainable development is that which meets the needs of future generation (in other words it focuses on inter-generational fairness). Banerjee (2003) and Koshy, Mataki and Lal (2005) also stated that sustainable development refers to “a process of change in which the exploitation of resources, direction of investments, orientation of technological development, and institutional change are made consistent with present and future needs”.

Jansen (2003) stated that sustainable development is the three-fold interplay of culture, structure and technology. Culture refers to fulfilling the social needs of the present and future generations. There is also structure, which refers to a situation where improvements in eco-efficiency must fit with the time frames for decision-making and action that are accepted by firms and governments, within current constraints. The third is technology, which refers to both the skills and techniques used to exploit resources and also to secure the renewal of these resources.

2.2.2 Rural development

According to Hobbs (1980) rural development is a policy goal, justified by normative concerns with value conflicts in societies. At the policy level rural development is
concerned with understanding the social and human consequences, of economic change in rural areas. Katar (2009) also proposed that rural development is a process that leads to sustainable improvement in the quality of life of the poor in rural areas. Essentially it involves helping the poorest among those who seek a livelihood in the rural areas. Among these people are small-scale farmers, tenants and the landless. McAreavey and McDonagh (2010) supported the idea that rural development consists of complex, multifunctional issues that emerge from different interest groups claiming their rights to economic well-being. The important elements involved in achieving sustainable rural development include: agricultural restructuring, economic diversification, generating employment, and creating opportunities for earning income.

2.2.3 Post conflict development

Post-conflict development refers to re-building of the economy after it has been devastated by a civil conflict or war. Collier (2006) and Krause and Jütersonke (2005) claimed that the need to rebuild states that have failed or collapsed due to conflict has increased in the past century. According to Barbra (2008) economic recovery in post-conflict territories is two dimensional: the interdependent interaction between the recovery of the financial system and the recovery of the real economy. Subedi (2012) also stated that post-conflict recovery should have an economic growth approach focused to address the factors that led to the conflict and at the same time taking into account the fragility of the environment. He proposed that post-conflict economic recovery should be explicitly outlined in a peace agreement, to avoid it being over--shadowed by transitional politics. Although every post-
conflict situation may be unique, ameliorative economic growth programs should be aim to re-establish essential economic governance functions and restore the government’s legitimacy. Priority should also be given to boosting employment and improving well-being as quickly as possible. Thirdly, there is need to address the root economic causes of the conflict and stabilize the economy and position it to grow rapidly (US Agency for International Development 2009).

In the post-conflict context, economic growth programs need to address the political and social sensitivities resulting from the conflict. Development agents should consider the historical nature of the conflict, the level of peace, and the country’s level of development as it emerges from the conflict. To be effective in such a sensitive political environment, every rebuilding decision should include a consideration of the impact on the legitimacy of the government, employment and improved welfare, as well as on perceptions of equity for the various factions previously participating in the conflict (US Agency for International Development 2009).

2.2.4 Endogenous development

According to Vázquez-Barquero (2009) the endogenous development model is aimed to develop a concept appropriate for backward developing states and territories. This approach is associated with the capacity of a local community to use the existing development potential within the state or territory. It has a relevant place in economic development processes, given that it acts as a catalyst of development by upholding and promoting local initiatives. Supporting this view, O’Hara and Stagl (2002) stated that consumer behaviour has relevance to sustain
local initiatives. To facilitate such initiatives, there needs to be change in production preferences after interaction with the farmers and other market participants. Huw and Marceau (2003) support this model, noting that the capacity to ensure a secure return on an investment is one of the most powerful incentives for economic development. Areas of such endogenous investment include human, physical or other forms of capital that contribute to growth.

Figure 5 below shows factors that the endogenous development approach takes into account in establishing development policy.

### Figure 5: Factors in the endogenous development approach

- **Creativity & Freedom**
- **Polycentric development of the Territory**
- **Transport & Communication infrastructure**
- **Culture & Development**
- **Innovation & Human Resources**
- **Entrepreneurial capacity & organization of Production**
- **Values, intuitions & Ethics**

**Source:** Vázquez-Barquero, (2009)

Figure 5 indicates that endogenous development policy should be formulated (or established) by taking into consideration factors that can both enhance and hinder development processes. However, this approach may be weakened by continuous changes of the factors (mentioned above in the diagram).
The summary outline showed that the establishment of development policies and approaches (or models) is determined by the situation, wants and needs of a particular state, territory or society. Development policies and approaches are derived from various factors including conflicts, the availability and type of resources and the types of governments. This leads to exploring common issues and challenges in developing states and territories that affect their development processes, to which I now turn.

3. Development issues in the developing countries and territories

The need for economic development arises when there is a lack of goods and services to serve those who need them. With the emergence of many development theories, models and strategies (some discussed above) the issue of under-development - especially in developing countries and dependent territories - began taking on new shapes. For example, Bernstein (2006) and Vázquez-Barquero (2009) argued that about 50 years ago economic development as a discipline became focused on identifying and solving challenges faced by states and territories by analysing their realities and proposing measures for new policies. Since then, the economies of these states and territories have changed and new theories and interpretations of their economic dynamics have appeared.

The issue of under-development in developing countries and territories is further complicated by the new phenomenon which Vázquez-Barquero (2009) refers to as new forces in development. One significant new force is globalization, where the world is becoming interlinked and highly competitive with the proliferation of
vertical global value chains as well as the invention of new technology, techniques and skills that are used by states, organizations and multinational corporations for development purposes. Globalization increases competition and changes market conditions. Bernstein (2006) referred to this as how development in poor countries is increasingly affected by the world economy, including the functioning of international markets, divisions of labour and flows of capital and technology. Generally this globalisation disadvantages developing countries and territories that lack advanced technology and skills (or large pools of cheap urban labour to attract investment).

To address this disparity third-world states and territories need to adapt new development policies, models and strategies to pursue their development goals and objectives.

2.3.1 Shaping new development policies for developing states

The high unemployment (and under-employment) as well as the increasing poverty rates experienced by many developing countries and territories in the 1980s and 1990s are indicators of a need for change in their development policies. These changes in policy are aimed to accommodate the challenges caused by the new development forces (some of which are referred to above) by restructuring production systems. Such strategies will facilitate adjustments in production processes to increase income sources, which contributes to improving people’s standard of living (Vázquez-Barquero 2009).

In many cases the core issues of developing countries and territories’ disadvantage is poor macroeconomic policies. These result in not achieving the goals of the
eradication of poverty, job creation and improved social welfare. This situation was described by Mehluma, Moenea and Torvik (2005) as the lack (or absence) of interaction between the social and economic mechanisms that determine the overall properties of modern sector expansion. Those participating in economic development processes should make attempts to manage and adjust the process to increase the productivity of the farms, and to make the industrial and service firms competitive at the level of national and regional, or even international markets (Katar 2009).

The success of any economic development policy depends on the ability to adapt to the social and political conditions of each state or territory. However, the social, political and institutional environment in which local initiatives are implemented has changed since mid-2007, when developed and emerging economies were affected by the financial crisis that has spilled over into the global economy (Vázquez-Barquero 2009).

The literature shows that economic development policy formulation and implementation needs to take into account local, national, regional and international issues, plus any unforeseen events that might affect progress and sustainability.

2.3.2 Economic development issues in SIDS

As referred to in chapter 1, the challenges faced by SIDS in pursuing sustainable economic development are widely recognized. They have been the subject of several conferences, including the Fourth Lome conference (1992), the Barbados
Global Conference (1994), the Mauritius Declaration (2005) and the UN conference in Rio de Janeiro (2012). These conferences focused on exploring ways SIDS can overcome their disadvantages (Ghina 2003). As noted in previous chapter, the issues related to economic development of the SIDS are associated with five areas:

**Small size**

This refer to the size of a state or territory measured in terms of its; population, land area or GDP. The smallness of SIDS constitutes a severe economic constraint for a number of reasons including: limited natural resources and high import dependency, which makes the economy highly dependent on foreign exchange earnings and exposed to terms of trade shifts (Koshy, Mataki & Lal 2005). The small size of the domestic market also severely limits domestic capital-raising and import-substitution possibilities and gives rise to high dependence on (usually primary) exports for capital. SIDS also “price-takers” and have a very limited control over the prices of the products they export and import. They do not have potentially large pools of labour, to attract manufacturing investment. In terms of human resources, the small size of the tax base means limited capacity in public administration which also affects service delivery (particularly of education and skills training) and means there is a paucity of the expertise required to enhance development processes (Rabanal & Cara 2012).

**Insularity and remoteness**

All SIDS states are by definition and nature insular (limited), although not all of them are situated in remote areas. Insularity and remoteness give rise to cost problems with transport and communication. The transport costs associated with the international trade of SIDS tend to be higher than in other countries, given that
the islands are separated by sea and have to use air and sea transport for their imports and exports. Also they trade in small volumes and so cannot access economies of scale. Land transport to some extent enables the movement of goods and people but faces the same high per-unit costs as sea transport, again because of the scale economies effect. Moreover, the SIDS are often excluded from the major sea and air transport routes, which disrupts and constrains their economic activities (Chand 2009).

**Proneness / Susceptibility to natural disasters**

SIDS are often vulnerable to natural disasters caused by cyclones (hurricanes or typhoons), earthquakes, landslides and volcanic eruptions. According to Hay (2013), given their smallness and remoteness, the negative impact of natural disasters on SIDS is usually relatively larger in terms of damage done to economic development infrastructure compared to non-island countries. In fact some disasters threaten the very survival of some SIDS, with massive dislocation, particularly for example in the agricultural sector. Such cases are particularly evident in Solomon Islands (discussed below). Others disasters may include the obliteration of entire village settlements, the disruption of transport or communication services and/or injury or even death of a high percentage of the inhabitants (Koshy, Mataki & Lal 2005).

**Environmental factors**

Environmental pressures arising from the economic development process in SIDS are comparatively higher than in larger states. Among the many causes of land shortages in SIDS are using agricultural land for establishing residential housing, industrial production factories and even sporting facilities. The economic
development process also brings with it an increased demand for resources, some of which are non-renewable. In fact some SIDS have experienced the exhaustion (or near depletion) of such natural resources as, for example, Fiji’s gold, Vanuatu’s manganese, Haiti’s bauxite and Nauru’s phosphate (Briguglio 1995).

According to William and Kraay (2000) SIDS also face problems associated with their geographical and natural characteristics. Most of them have unique and very fragile ecosystems. Their uniqueness, which is an outcome of their insularity, results in a low level of resistance to invasive exotic flora and fauna, which endanger indigenous species of flora and fauna. Calbert (2006) pointed out that another major environmental problem, particularly severe for Micronesian SIDS, is rising sea levels induced by global warming. This results in many low-lying coral atolls losing portions of their land through sea-borne erosion.

**Other characteristics of SIDS**

Other important characteristics of SIDS include dependence on foreign sources for finance and difficult demographic changes. Most SIDS, especially in the Pacific region, have a very high dependence on foreign sources of finance, including remittances from emigrants and development assistance from donor countries. Demographic changes also can be difficult. There are instances in SIDS where, for various reasons, people emigrate from the country. Internal mobility from one island to another can deplete agricultural productivity through labour shortages in the migrants’ area of origin. One reason for this internal migration is attraction to urban centres, for the jobs and education opportunities they promise. These movements lead to brain and skills drains and to social instability. This even happens on islands which are economically successful, due to limited opportunities
for specialization. These factors cause the economies of these states to be very vulnerable to forces outside their control and so threatens their economic viability (Briguglio 1995).

Perkins and Wei-Ning (2006) stated that one barrier to economic development in SIDS is to find an effective balance between traditional and government laws. This imbalance is especially important in the SIDS of Micronesia and the western Pacific, where de facto traditional authority continues over land and coastal zone tenure, resource ownership, and environmental management. This is despite formal constitutional provisions, which may vest authority over these areas in the government. The difficulty of integrating the formal legal-constitutional and traditional methods of decision-making means at times conflicts arise when villagers perceive the central government to be usurping the authority of traditional customary rules.

In fact many researchers have raised doubts about the ability of contemporary villagers to adequately manage natural resources when applying traditional law. They argued that there needs to be a resource management approach that integrates modern ways with traditional ecological knowledge and perspectives. Any effort to integrate economic development and environmental protection in SIDS will likely require some form of deliberate and comprehensive planning (Perkins & Wei-Ning 2006).

Another factor that affects development in the SIDS is lack of sound political leadership to establish policies that ought to promote and facilitate development.
Good leadership would also minimise the level of corruption, which results in misuse of official resources for personal gain (Chand 2009).

Based on international experience, small states are not necessarily poorer, nor do they grow more slowly than larger states. However, it helps to have a valuable export commodity, as the experiences of the Gulf Arab states indicates. The development success of other small states is made possible especially when they are close to large markets, and have relatively high population densities. Small states have overcome economic development obstacles by increasing trade and specializing in a small number of exports (United Nations Environmental programme 1996). However, this reliance on specialization has been shown to increase their vulnerability to rapid shifts in the terms of trade and changes in economic conditions in market countries. As a result, small states experience greater volatility in growth (World Bank. Discussion notes 2010).

The dominant patterns of the development challenges of SIDS are very relevant to those experienced by the dependent territories in the South Pacific region, as well as to Bougainville. This sets the basis to explore the hindrances to the development process of Bougainville, as well as the need to formulate new development approaches to overcoming such obstacles.

4. Development challenges and constraints in the South Pacific’s SIDS

The three regions of SIDS and dependent territories in the South Pacific region are; Melanesia, Polynesia and Micronesia. Melanesian states include PNG, Fiji, Vanuatu, New Caledonia, Solomon Islands and, as of 2005, Bougainville a dependent territory
of PNG. In the following discussion I will highlight various factors that have influenced development (both to enhance and adversely affect it) in the South Pacific Island states. These will serve as a basis to make comparisons of similarities with the Bougainville’s economic development challenges.

### 2.4.1 Geographical features of Melanesian states

The Melanesian states comprise many islands. PNG is the biggest comprising about 600 islands with a total land area of about 463,000 square kilometres (World Bank Group in Papua New Guinea 2013). Vanuatu is the smallest having 83 islands (18 are inhabited) covering a land area of approximately 12,200 square kilometres, divided into 6 provinces (Schlegelmilch 2010), (Briney 2014).

The Solomon Islands is the second largest Melanesian state, with 15 inhabited islands and other small atolls. Its total area is 27,540 square kilometres (World Factbook. Solomon Islands 2014). Fiji has 322 islands (of which only 106 are inhabited) and 522 islets. Its land area is about 18,274 square kilometres (World Factbook. Fiji 2013). New Caledonia comprises two main islands, and several smaller islands which cover approximately 18,575.5 square kilometres (New Caledonia Economy Profile 2014 2014). These features have some similarities with Bougainville, (see chapter 3 below), so it could be expected to have similar economic development challenges.

### 2.4.2 Type of economies in the Melanesian states

For this section I will highlight various factors in Melanesian states that have similarities with Bougainville. Most Melanesian states have export-oriented economies, mostly minerals and agriculture products. In PNG about 85 per cent of
its people live a traditional village-based life, dependent on subsistence farming for their livelihood. Many produce small surpluses for local markets whereas larger producers may engage in small-scale cash crop/commercial agriculture. The remaining 15 per cent of the population live in the urban areas (World Bank Group in Papua New Guinea 2013).

About seven major mines are operating in PNG (OK Tedi, Lihir, Pogera, Tolukuma, Edie Creek, Hidden Valley, Simberi and Sinivit) (Global Edge 2015). The LNG (Liquefied Natural Gas) project in Hela province, is under construction by Exxon Mobil. It is expected to produce more than 9 trillion cubic feet of gas over 30 years (Ross 2014).

In Vanuatu’s economy, agricultural activities range from subsistence to smallholder farming of coconut and other cash crops. Copra, cocoa, kava and beef account for more than 60 per cent of the total exports (Commonwealth Yearbook 2013. Vanuatu 2014). In fact agriculture accounts for 20 per cent of GDP (Global Edge.Vanuatu 2011). Tourism is also a booming industry sector, and accounts for about 51 per cent of GDP in 2013 (Marango 2013). Vanuatu’s low level of industrialization leads to lack of employment opportunities, and inaccessibility to markets (Sokomanu et al. 2007).

In the Solomon Islands the export of timber is the main income source of the economy apart from tourism and agriculture, which includes cocoa, copra, palm kernels, rice, potatoes, vegetables, fruit; cattle and pigs. The island also has marine resources and rich gold deposits in Guadalcanal province (Solomon Islands - Country Profile - 2013 2014).
2.4.3 Economic development challenges of Melanesian states

Among many factors that affect economic development in the Melanesian states I will focus on land issues, corruption, natural disasters and civil conflicts.

Land issues

Traditional land usage and ownership hinders development. Given that in Melanesian states most land is traditionally owned, development processes are often affected by disputes which arise over ownership and compensation between local landholders and developers. There are many examples of such cases.

In the 1980s, the OK Tedi mine landowners of the Western Province, in PNG claimed compensation for the destruction of forest, alienation of land, and pollution of their rivers by the mine waste. In 1996, with international support from, Holland, Germany and USA, the International Court ruled that the BHP mining company should recompense the landowners with compensation of US$2 billion (about PNGK 4B). An additional US$20 million (about PNGK 40B) was paid to the most-affected downstream villagers (Hilson 2002).

In Vanuatu the recently enacted MILD (Melanesian Indigenous Land Defence Alliance) which opposes any form of alienation of land and sea from customary owners can be seen as a counter-productive to development, given that land is a facilitator of development (Makin 2014).

In New Caledonia local villagers are not happy about the lack of compensation and the disruption to their traditional livelihoods, as well as the influx of thousands of mineworkers. For the locals development is unsustainable, especially with the mining of nickel which resides in the top strata of their hills, which now in many areas have been cut away (Batterbury 2008).
Disasters

In the last 20 years PNG had three major disasters that have severely affected its economy. In addition to the closure of the Panguna mine (referred to above in chapter 1) there was the eruption of a volcano in Rabaul, East New Britain Province in 1994, which destroyed huge numbers of coconut plantations (Nicholson 2014). These two events reduced PNG’s income (from minerals and copra production). In addition the Aitape tsunami in West Sepik province in 1998 incurred additional financial burdens (for evacuation operations and relief supplies for victims) for PNG, which was already financially beset by the two disasters referred to above (Davies et al. 1998).

The Solomon Islands has a history of being struck by disasters, especially earthquakes and tsunamis. For example, in May 1986 cyclone Namu badly affected the Solomon Islands, claiming many lives and destroying much property (Australia Government. Bureau of Meteorology 2014). In April 2007 and in February 2013 the island was struck by a major earthquake followed by major tsunami which killed many people, in addition to causing massive destruction to the environment, infrastructure and industries (Lovett 2007). In April of 2014 tropical cyclone Ita struck the Solomon Islands, resulting in the closure of the St Barbara gold ridge mine. The floods damaged the access roads to the mine cutting off food, medical supplies and fuel for electricity and forcing the mine to close down. About two-hundred mine workers were evacuated and there is uncertainty as to whether the mine will be re-opened (Lucas 2014).
**Conflicts /Civil unrest**

Vanuatu’s economic development challenges include intense political instability and diplomatic tensions from the 1990s to 2004, which resulted in Vanuatu having nine prime ministers between 1995 and 2004 (Howes & Nikunj 2009). In New Caledonia, unrest initiated by the Kanaks in 2014, resulted in the closure of the US$ 6 billion Vale nickel processing plant, that employs about 14 thousand people at Goro. The tension between the economically encapsulated mining sector, staffed mainly by outsiders, and the native Kanaks is a development challenge for New Caledonia. In effect it suffers from the economics of the “resource curse” – a booming trade sector increasing prices and damaging local production (Frankel 2010). As on Bougainville, the mining sector has had deleterious environmental consequences. The locals claimed that 100,000 litres of acid-tainted effluent spilled and killed about 1,000 fish. The damage of the Kanak protests to the mining site was estimated to be more than US$ 34 million (Blades 2014).

In Solomon Islands ethnic clashes between Malaitans and Guadalcanals has affected economic activities (Norm 2003). These effects included, the shutdown of a Japanese joint venture, Solomon Taiyo Ltd, the only fish cannery in the country (Solomon Islands - Country Profile - 2013 2014).

**Corruption**

The development challenges of Melanesian states also include the misuse of resources (especially funds) through corruption. For example in PNG there are reports that indicate development difficulties supposedly linked to corruption. A 2006 UN survey demoted PNG from the status of developing country to a least-
developed country (Fitzpatrick 2015). PNG was also rated 150th out of the 176 countries surveyed in a recent corruption index (Refworld. United Nations High Commisioner for Refugees 2013). Additionally, in the UN Human Development Index PNG was ranked number 153 out of 179 least-developed states in the Asia-Pacific (Filer et al. 2012). These are some examples of poor development outcomes that results from corruption.

2.4.4 Similarities of Polynesia, Micronesia states and Bougainville

Polynesia and Micronesian states and territories have similarities with Bougainville (a Melanesian territory) in many aspects including land area, population the types of resources and the revenue sources. Polynesian and Micronesian states are characterized by having small islands spread over a very large portion of the mid and southern Pacific Ocean. Polynesia has about 4,167 square kilometres of land, while Micronesia has approximately a 2,700 square kilometres land area (Rabanal & Cara 2012).

*Income sources*

The majority of these states and territories derive much of their income from foreign aid, plus the remittances from those who live and work in other countries. Parents usually encourage their young people to go to countries where they can earn good money to remit to their relatives back at home. Some places, such as Easter Island, have tourism as source of income. Some have more unusual sources of income, such as Tuvalu which marketed its 'tv' internet top-level domain. The Cook islands relies on philatelic sales for its income (Koshy, Mataki & Lal 2005).
Additional sources of income come from the sale of fishing rights to foreign nations that harvest tuna from the SIDS’ territorial seas. The crews aboard fishing boats contribute little to the local economy and do not facilitate trade from their ships to the local people (Rabanal & Cara 2012). Government revenue includes the $US 150 million the US paid into a trust fund for reparations to the residents of Bikini Atoll who were displaced due to nuclear testing on their islands (Niedenthal 1997). The Polynesian and Micronesian states and territories also have few mineral deposits. Among them are high grade phosphate on Nauru and Gilbert islands. The Caroline Islands, Palau (Belau), Yap, Chuuk (Truk), Pohnpei (Ponapei) and Kosrae have fertile land and few rich deposits of phosphate, guano, bauxite and iron as well. The tourist industry consists mainly of scuba divers that come to see the coral reefs, do wall dives, and visit sunken ships from World War II (ABC Radio Australia Broadcast 2005).

In the agriculture sector these states produce coconuts, sugarcane, and tapioca. There are large palm plantations that are now developed in parts of Micronesia (Rabanal & Cara 2012). The Gilbert Islands have coconut palms that were established by the British colonial administration (BBC News. Kiribati profile 2003).

2.4.5 Polynesian and Micronesian economic development challenges

Given their smallness in size, these states and territories lack resources that can be exploited and utilized for development purposes. Like the Solomons they are also vulnerable to natural disasters. Volcanic activity can cause some islands to sink into the sea. Micronesia’s many low-lying islands can suffer severe famine if their
gardens are poisoned by salt from the storm-surge of a tropical cyclone (Campbell et al. 2008).

According to Skoog (2003) and Niedenthal (1997), one specific factor disadvantaging the development of Micronesian states and territories, particularly the Bikini atolls, is the nuclear testing by the USA in March 1954. The nuclear fallout polluted the land making it unsafe for agriculture and even for the health of the inhabitants. This is similar to Bougainville where the disposal of noxious wastes, including cyanides and heavy metals from the Panguna mine’s copper and gold concentration process caused destruction and pollution to farming land especially from erosion of the tailings dumps (McIntosh 1990).

2.4. 6 Economic growth/GDP rate of Pacific region SIDS

The factors highlighted above lead to the three Pacific regions’ economies struggling to progress. For example, for the period; 1970-2013 GDP per capita income in Melanesia rose by $US 2924 and the average growth of GDP was $US 68 or only 16.1 per cent in total. Polynesia’s GDP average growth was $US 483.3 or 20.3 per cent and $US 75.4 or 14.4 per cent for Micronesia (Kushnir 2013). This was much less than the growth rates of the advanced economies, let alone China, in that period.

It appears that the SIDS, with both their narrow economic bases and ethnically diverse populations (leading to fractious politics), may be developmentally vulnerable; this is an important consideration for Bougainville.

In summary the poor rankings of Pacific economies in international comparisons results from their remoteness, smallness, high transport and logistics costs, and
their lack of skilled/educated manpower. Their domestic markets are small, so they rely on external demand to expand output from their productive sectors to sustain growth. Their remoteness poses persistent challenges to merchandise trade. Recent cross-country comparisons show the Pacific economies falling further behind in terms of integrating with global markets and reducing structural impediments to trade (Rabanal & Cara 2012).

Studies by the World Bank on cross-border trade indicate deteriorating economic growth among the Micronesians in 2014. Among the 189 countries covered in this study, the RMI (Republic of Marshall Islands) fell from 57th to 62nd, the FSM (Federated State of Micronesia) from 101st to 103rd, and Palau from 95th to 96th. In fact the FSM remained on a low-growth path, with growth of 0.6 per cent in financial year 2013 only slightly improving on the 0.4 per cent recorded in the 2012 financial year (Rabanal & Cara 2012).

The economic development literature on the states and territories in the Pacific region shows that five key factors (referred to above) affect development in the SIDS. These considerations are important in envisaging Bougainville’s future development.

The relationship between aid and development is among the contemporary challenges for developing states and territories. Foreign aid is one of the major financial sources for development purposes in the SIDS. However, the aid relationship between donors and recipients can be quite controversial, especially in relation to donor states’ interests in the recipient states or territories. This background serves as a basis to analysing issues related to aid and development in the following discussions.
5. Aid and development

One aspect of many inquiries is what factors cause aid-driven development to be either effective or ineffective. There are even issues around whose interests (donor or recipient) are served by aid, especially during the Cold War and currently with the rise of terrorism. Spear and Williams (2012) claimed that the relationship between security, aid and development issues in global politics attracts significant attention from policymakers and analysts. The aid relationship is still not well understood in either theory or practice.

Doucouliagos and Paldam (2008) proposed that the basic reason for providing aid should be to generate development so that poverty can be reduced. This is the orthodoxy: aid is assistance given to poor countries in order to generate their development. Nevertheless, for the past 40 years policy makers and analysts have debated the question of whether aid-driven development is effective.

Raghuram and Subramanian (2011) argued that, in principle, aid could increase the productivity and supply of non-traded goods. Examples of this are when aid is spent on imparting skills and expanding the availability of skilled labour. From a more economic point of view Minoiu and Reddy (2010) conclude that empirical evidence shows that aid promotes economic growth unconditionally, at least in certain macroeconomic environments. However, aid through its monetary effect may cause a currency appreciation in the recipient state which, in turn, may lead to a decline in exports or increased competition for domestic manufacturers and producers. This is not inevitable; aid can also lead to rising trade and incomes if it improves productivity, thereby offsetting any effect of currency appreciation.
Sundewall et al. (2010) Bjerg, Bjørnskov and Holm (2011) analysed factors that lead to aid ineffectiveness. Raghuram and Subramanian (2011) argued that aid leads to ‘Aid Disease’ where, aid resources are used either to sustain government expenditures (current consumption) instead of investing in economic development processes or they are invested in the wrong type of economic development. This creates an adverse impact on development, especially affecting the growth of export sectors. That is why in this thesis I have recommended an aid focus upon Bougainville’s export sector, principally cocoa.

2.5.1 Policy and management

Aid policy and its management and impact are much debated subjects in the development literature, especially whether and how aid can positively assist development. Hudson (2004) and Pierre, Bayraktar and Karim (2008) acknowledge that aid has had a positive impact on growth for developing countries with good fiscal, monetary and trade policies in place. On the other hand aid had little impact on growth for those countries that were following poor policies. Thomaz, Chianca and Sasaki (2008) also argued much aid has been wasted on poorly conceived and executed projects and programs. Good aid policy is where donors and recipients think strategically in terms of what goals and objectives they are trying to achieve with aid resources.

So aid can be a catalyst but not the driver in development. It can work and achieve its aims even in disadvantageous situations, so long as project design and implementation are effective and the recipient has sound policies in place. Anderson, Dayna and Isabella (2012) also raised the possibility of mismatches in aid
policy, where external donor priorities are not in harmony with the internal recipient’s objectives, which adversely affects development.

Shaohua, Mu and Ravallion (2009) and Keeley (2012) also argued that increasing the amount of aid does not always guarantee the success (or impact) of that aid. In fact at times more external aid – if it is poorly targeted - can weaken domestic institutions. For example, by removing budget constraints it makes the recipient country less sustainable if the aid stops or is reduced. Aid must be designed as a mechanism for development and for achieving results on the ground. Moreover processes to manage aid must be developed within each recipient country, not just at the global level (Keeley 2012).

Kharas, Woojin and Koji (2011) noted that one key to success for aid-driven development is effective management and coordination of aid projects. In this regard Keeley (2012) also pointed out that it is critical to differentiate between aid coordination and cooperation. The latter refers to working together harmoniously in achieving a common goal. Aid coordination is not cooperation; it refers rather to how different activities can be organized so as to reinforce rather than thwarting each other.

2.5.2 Government structures

Institutional factors can also have a major impact on the effectiveness of aid. Lessmann and Markwardt (2012) raised issues related to types of government and aid effectiveness. They claim that one rationale for supporting the effectiveness of aid in decentralized governments is that the local /state government is closer to the
people. Local officials are better informed on local needs, and are more capable of providing information for the development and implementation of aid policies.

On the other hand, they also argued that decentralization could strengthen the power of local elite groups, which might increase corruption. This is in supposed contrast to centralized governments, which presumably have fewer elites (or leaders) with power and presumably less corruption. This issue is significant for the development-aid debate, especially in the case of dependent territories like Bougainville, where decisions over aid resources are made through a lengthy process involving both the territorial and local level government authorities.

2.5.3 The problem of corruption

Cultural values and practices have a very significant influence on aid and development implementation issues. In this regard Ball (2010) proposed that cultural values held by the people in both donor and the recipient states are important influences on all processes of aid and development. Cultural attitudes and practices that have counter-productive effects on development were referred to by Bracarense (2013), as ‘backward culture’ and were supposedly the main cause of underdevelopment in many developing countries.

According to Anderson, Dayna and Isabella (2012), aid-related corruption includes; theft, diversion and unfair distribution of aid resources, and is organised through; patron-clientalism, (ethnic) favouritism and familial nepotism by those in local control over the distribution of aid. Keeley (2012) stated that aid does not promote growth in a corrupt environment, where the processes are manipulated towards
enriching the local elites. Öhler, Nunnenkamp and Dreher (2012) also claimed that corruption is a hindrance to the effectiveness of aid-driven development.

2.5.4 Aid models

There are aid-driven development theories, aid models and effective aid management principles that are relevant and useful for mapping out the role of Australian aid in Bougainville’s future development.

The two main types of aid models are tied (or conditional) and un-tied (or unconditional) aid. Tied aid refers to aid resources that are pre-allocated by donors to specific socio-economic and political development projects in the recipient states. In some cases even the implementation of the projects is controlled by the donor agencies. Untied aid refers to a situation where a donor gives aid resources (in most cases in the form of budget funding) and the recipient state (or territory) allocates these aid resources to specific projects of its own choosing. My study will evaluate the mixed effects of these models in application in Bougainville.

Dalgaard (2008) posited that aid tied to host government investments increases long-run growth and welfare. Conversely, untied aid may have lower growth (if labour supply is internal), although it tends to increase welfare in the long run. On this question Doucouliagos and Paldam (2008) also claimed that the inclusion of the aid donor’s institutional conditionality results in smaller aid-growth effects. This appears to be an important indirect effect through which some aid contributes less positively to development growth.

Öhler, Nunnenkamp and Dreher (2012) also argued that conditionality appears to have failed in international development cooperation, in particular to the extent...
that donors used foreign aid as a means to “buy” policy reform in recipient states. By contrast, conditionality is widely perceived to have been “very effective” in the EU’s enlargement strategy. The desirability of EU membership appears to have prompted candidate countries to adhere to its macroeconomic policy conditions.

2.5.5 Principles for effective aid management

The first of these principles is that aid resources should be used for development processes. Keeley (2012), Kharas, Woojin and Koji (2011) and Sengupta (1993) concurred, insisting that aid should be invested to enhance the factors that promote development in the recipient states. Aid should not be provided as consumable development (goods or services for current use) in itself.

Secondly, aid resources should not be used to sustain existing organizational (government) programs or structures. Bjørnskov (2010) and Raghuram and Subramanian (2011) referred to this scenario as ‘Aid Disease’ where aid resources disappear into unproductive government consumption, create excessive dependency and so adversely affect basic institutions such as the legal and regulatory systems and weakening long term sustainability.

Thirdly, there is need for a policy environment where recipient states should take ownership responsibility for aid policy and management. In this regard Lessmann and Markwardt (2012), Rigg (2002), Burnside and Dollar (2000) and Hudson (2004) saw the main idea as that aid would be more effective if it was accompanied by “good policy”, where the donors and recipients both know what is required to be done to achieve shared goals. In the absence of policy synchronicity (between donor and recipient) aid alone has no significant impact on growth.
Finally, there is the need for mutual coordination, which involves both donor and recipient knowing and agreeing upon each others’ goals and objectives. Kilby and Dreher (2010), and Kharas, Woojin and Koji (2011) emphasised that efficient coordination between donor and recipient states is crucial for effectiveness in aid-driven development. Keeley (2012), also noted that the effective and transparent means of coordination is the “3Ws” principle, which determines, who does what and when.

These (above) principles were developed from studies and experiences of aid and development in developing states and territories and are relevant for contemporary management of aid-funded projects in Bougainville.

2.5.6 Economic development theories

There are various theories that are related to aid-driven development. Geostrategically-driven development assistance became prominent during the Cold War, when the two super-powers, USA and the former USSR, were fighting an ideological war and foreign aid was amongst their competitive instruments. During this period, Oslington (1993), Haynes (2008) and Loh (2013) claim, development studies emerged as a separate field of its own. Among the economic development theories that have been advanced are:

Classical and neo-classical theories

Classical theory argues, that the economy is self-regulating, and self-adjusting, whereby the mechanisms that exist within the market system brings an economy back to the natural level of real GDP growth when circumstances cause it to fall below or exceed the real GDP (Connell 1997). Karl and Nieby (1940) proposed that
any increase or decrease of any economy has to be understood as a "special case" in a historical situation and not caused by external factors. Connell (1997), a critic of neo-classicism, argued that classical theory merely performs symbolic functions by providing rituals of solidarity and so has become irrelevant. He cited in support that social science fields (like sociology and ethnography) do not use its concepts.

Neo-classical theory argues that a steady economic growth rate is accomplished with the proper amounts of the three driving forces: labour, capital and technology. In this regard Omer (2011) stated that the determination of prices, outputs, and income distribution in markets-through supply and demand is balanced by employing available information and factors of production. In other words the amount of labour and capital in the production function has to be balanced so that, when a new technology becomes available, labour and capital adjust to maintain growth.

Modernism and Post-modern theory

Modernism refers to development of modern industrial societies and the rapid growth of industries and cities after WWII. Generally this model includes the activities that create a wide range of economic, political, social and cultural changes. Modernist argued that the traditional forms of art, architecture, literature, religious faith, philosophy, social organization, and activities of daily life were becoming outdated in the new emerging fully industrialized world (Mikail 2012). In this instance, post-modernist theorists argues that it is not a matter of improving development theories but what concept of development can be imagined and used to pursue development processes in the future (Mc Gregor 2007).
There is also *dependency theory* which, according Amsden (2003) saw poor developing countries as not supposed to develop because they were dependent on advanced countries for their capital, technology, and markets. They sold primary products and imported elaborated transferred manufactures in a situation where the terms of trade were negative for primary production.

Harriss (2009) argued that the dependency theorists saw the under-developed aid-recipient states as constrained by the development structure, where donor states limit the space by establishing policies within which recipient states have to operate to pursue their development goals. The recipient states become reliant on the donor states for construction of their development goals. Oslington (1993) saw dependency theory as proposing (or condoning) some form of contemporary imperialism and mechanisms of suppression towards genuine economic development in developing states and territories.

*Structuralism and post-structuralism*

The central idea of structuralism is that development systems can be made effective if their structures are established in an orderly manner through interactions with stakeholders and by contrasting the theoretical elements of a specific context (Mclaughlin 2013). They believe that any part within a structure needs to be supportive of the effectiveness of the system (Button 2006). The post-structuralists argued that to enhance effectiveness there is a need for practice in addition to interactions. This theory views issues from a more global perspective, as a manifestation of underlying issues with the status, authority, and identity of systems (Mclaughlin 2013).
Associated with this theory are the SAP (Structural Adjustment Programs) which were influential in the 1980s and 1990s. Under this theory the recipient state is forced to undergo an economic re-structuring required by donors so as to be qualified to receive aid. According to Konadu-Agyemang and Sesime (2003) structural adjustment is the process whereby economic policies and relevant institutions are reformed with a view to enhancing economic growth, improving resource allocation, increasing economic efficiency, and increasing the economy’s resilience to changes in its domestic or global markets.

The SAP was designed by the World Bank and the IMF (International Monetary Fund). The process is normally supported by policies designed to achieve sustainable deficit reduction and to reduce inflation. Brawley and Baerg (2007) claimed SAPs were intended to improve a country’s ability to earn more through exports over the long term. However, almost everyone agrees that SAPs do not significantly improve most countries' balance of payments.

*Liberal and neo-liberal theories*

Liberals uphold the idea of freedom of an individual from control by state laws and other policies or beliefs. Gutmann (2013) stated that the liberal theory is based upon the concept of respect for persons as agents and bearers of individual rights (free and fair elections, civil rights, freedom of the press, freedom of religion, free trade, and private property).

These principles were referred to by Sinopoli and Hirschmann (1991) as liberal conceptions of the self, coupled with the principles of justice. As a result liberals rejected the notions of common good, which led to replacing absolutism in government with representative democracy and the rule of law. In this view, Birch
(1984) stated that liberals emphasised the exercise of freedom as an ultimate moral and political value in decision making processes over socio-economic and political development issues.

*Neo-liberalism theory* is both a driver of SAP approaches and a further iteration of the liberals’ philosophy. According to Ganapathy (2011) it is rooted in the assumption that free market economics and private property rights provide the fairest, most efficient, and most rational means for gaining and maintaining economic growth and human well-being. Neo-liberal policies prescribe a limited economic role for the state beyond providing basic infrastructure, secure markets/property and the rule of law. This limited state system is supposed to facilitate the movement of capital across the globe to the advantage of low-income countries (and territories).

Murray (2011) claimed that neo-liberalism theory is associated with radical reform, re-structuring and diminishing the role of the state in order to place the market at the centre of development strategies. In this theory poverty elimination is not an explicit concern. Rather, it was believed that economic growth should be promoted and that this would eventually benefit ("trickle down" to) the poor. This theory guided and dominated development policies for much of the 1980s and 1990s. Neo-liberal theory saw aid as a means primarily to facilitate structural adjustment. In that sense it provided the intellectual foundation of the SAP programs.

However, some critics argued that neo-liberal reform created new forms of poverty and in-equality and that market-led strategies merely favoured wealthy and powerful states and their client elites in developing countries. These critics further argued that the state’s important role to eliminate poverty was over-shadowed by
the rationale of this theory. In this regard Pineo (2014) discussed the ineffectiveness of neo-liberalism in generating development for Latin America (and other states) from the 1980s until recently, when states began to move away from adapting this theory to pursue their own development processes. However, he acknowledged that the effectiveness (and/or ineffectiveness) of neo-liberalism may vary, depending on situations such as the type of government and global financial situations.

The above discussion on aid and development highlighted the different rationales for aid, as well as the factors that can make aid-driven development both effective and ineffective. The factors that make aid effective can be seen as strategies that can be used to address problems (some of which are referred to above) related to development issues and challenges, especially in the developing states and territories. This discussion also covered various development theories that emerged from studies related to aid and development particularly after the cold war era. This background serves as the basis upon which to select an aid-driven development model that can be effectively used as a framework for construction of this study.

2.5.7 Theoretical framework

Given the theoretical background and the rationales for various aid-driven development theories, I am adapting part of neo-liberalism theory to explore the role of DFAT aid in the future of Bougainville’s development. That is that aid should support elements of the recipient state that will improve that state’s economic sustainability and allow it to enter international markets. Thus DFAT aid policy and
procurement processes in Bougainville should allocate aid resources principally to assisting the export-oriented economic development sector.

The re-alignment of procurement processes will involve incorporation of the effective aid management principles and a tied aid model (referred to above) using the trade-supporting element of neo-liberal theory as a template for implementation of DFAT aid-funded projects. Effective aid management principles are relevant for transparent and accountable management of aid resources. Tied aid is deemed to be an appropriate model to minimise corruption (caused by the factors discussed previously), as any financial flows will be tied to specific projects.

It is proposed that the ABG, in consultation with appropriate stakeholders, will be responsible to identify (or select) the projects but that funding and implementation of these projects will be managed by DFAT officials. The rationale of this method is to allow the Bougainville government to take ownership of aid policy and minimise the mismatch between donor and recipient priorities, while ensuring aid effectiveness.

Neo-liberal theory emphasises export-oriented economic development, so it is deemed to be an appropriate model to facilitate the export of Bougainville’s resources. As proposed above, the cocoa industry has been selected as a model to illustrate the best utilization of DFAT aid for Bougainville’s economic development. Cocoa production is already taking place in Bougainville, so aid resources can be used to improve cocoa production and wet bean processing to improve the quality of dried cocoa beans for exports.
6. Summary

Development is a very broad term that connotes more than just growth but also change, and affirmative progress of both measurable and non-measurable aspects of development. Economic development refers to the growth of the economy which is measured by GDP or per capita income. There are various factors that both enhance and affect economic development processes. Investments in revenue generation activities have a direct result for the economy, while external factors (for example, geographical settings, disasters and civil conflicts) have a deleterious influence on both economic growth and development.

In an attempt to address development issues various theories - especially those related to aid-driven development - emerged from situations where certain techniques and principles were formulated and applied to address particular problems. The variety of these theories reflects the diversity of the problems to be addressed. In other words development theories can be seen as a set of guidelines for solving problems. Development issues and challenges in states and territories are shaped by factors that have local, national, regional and international influences. In most cases development in the SIDS is inhibited by endogenous factors that limit both the scale and range of their economic activities, as well as natural disasters and/or civil conflicts. In an attempt to address these development issues and challenges many policies and strategies have been implemented.

The aid-driven development model became prominent during the post-World War II decolonization. The SIDS and post-conflict states are faced with some very difficult development issues and challenges. In the Pacific region Bougainville is one of such cases with regard to aid and development issues.
Chapter 3: 

Bougainville’s development issues, challenges and potential

1. Introduction

Bougainville became part of PNG due to an arrangement between the early colonizers whereby Germany and Britain agreed to split the Solomon Islands, with the most northerly islands (the main Bougainville Island) going to Germany as part of its New Guinea colony. Britain in return took over Western Samoa. During World War I, Australia occupied Bougainville together with the rest of German New Guinea. The League of Nations placed this territory under Australian mandate in 1920. After World War II Australia resumed control over Bougainville under UN Mandated Trusteeship, effectively treating its Territory, Papua and the mandated New Guinea as one colony. In 1975 PNG got its independence from Australia, with Bougainville becoming one of its 20 provinces (Braithwaite et al. 2010).

As referred to in chapter 1, Bougainville assumed the political status of an autonomous government in 2005. A referendum which will determine its future will be held no later than 2020.
3.1.1 The land, people and their life-style

The Bougainville region spreads across the Solomon Sea. It includes 59 islands, of which 23 are inhabited and 36 are uninhabited. Among the small islands is Buka, which is currently the capital of Bougainville. There is also Nissan Island which is the biggest among the atolls off the northern tip of Bougainville (Braithwaite et al. 2010), (Ogan 1991), and (Jennings & Claxton 2013).

3.1.2 Political administrative structures

The Autonomous Bougainville Government has political and administrative structures established for the purposes of the governance of the people. Basically Bougainville is divided into three regions; north, south and central. The political structure of the ABG comprises 39 constituencies which are represented by a MHR (Member of the House of Representatives).

For administrative purposes the region is divided into 13 district-level governments. These districts are further divided into 39 COEs (Council of Elders), which is a local level government. There are three COEs within each district government. These are mechanisms for delivery of basic public goods and services to the people. At the HQ level the ABG has 12 departments headed by secretaries. These cater for various development and service delivery areas. Under these departments are divisions headed by chief executive officers responsible for specific sectors (Autonomous Bougainville Government. Constitution 2004).

The main government frameworks for governance, service delivery and development processes are included in the Bougainville constitution and the BPA (both referred to above: chapter 1). The former is a legal document that contains
the laws for Bougainville. The latter is both a legal and administrative document. In fact the BPA serves as a road map for the implementation of autonomy arrangements through its provisions on the inter-governmental relations between the ABG and the PNG government. These provisions include financial and administrative issues, matters regarding weapons disposal, as well as measures to implement the forthcoming referendum on Bougainville’s future.

Other key documents are the ABG’s Corporate and Strategic Action Plans. These documents outline specific areas within the Bougainville’s administration that need to be improved. Among these areas are; HR matters, organizational structures and other resources and equipment that are required to improve the performance of the ABG in providing goods and services to the citizens.

In addition, the ABG’s MTDP (Medium Term Development Plan) 2014-2017 provides a development plan for the whole territory. This document was developed by the Planning and Aid Coordination Division of the Bougainville administration. It basically outlines a comprehensive range of strategies, goals and targets for each development sector.

The Inward Investment Policy is the Bougainville government’s investment policy, developed by Tuia International, a New Zealand consultancy company. This provides the policies, guidelines, terms and conditions that are to be met by investors in order to qualify to invest in Bougainville (Autonomous Bougainville Government. Autonomy Division 2014).

Given this brief background of the current situation in Bougainville, there are issues and challenges that will affect future development in Bougainville. It is to these that I now turn.
As referred to above (chapter 1), in this thesis I will focus on post-conflict issues and challenges in exploring the factors that disadvantage Bougainville’s development. The previous discussion of development issues in SIDS is relevant for Bougainville, given that it exhibits most of their characteristics.

‘Post-conflict’ refers to the period after signing of the cease-fire in 1997 as a result of New Zealand-mediated negotiation between the Bougainville leaders and the PNG government. The cease-fire led to a reasonable peace, although today there are still weapons and incidents of lawlessness in some areas. The restoration of normalcy paved the way for post-conflict restoration development. The main sources of funding for restoration come from the PNG government and donor agencies (cf. chapter 1). Subsequent restoration development has been effective in some areas and less so in others. There are varying reasons as to why this is so.

I will now explore in more detail the challenges associated with Bougainville’s economic development as a dependent micro-territory (or a SIDS) before, in later chapters, analysing how aid can assist in meeting those challenges.

2. Bougainville’s development issues and challenges

There are various factors – some endogenous and some exogenous - that affect development processes in Bougainville. Out of many factors that affect development I will limit my analysis to two aspects which can be seen as the most prominent obstacles to development processes in Bougainville: land issues or disputes and law and order-related problems.
3.2.1 Land issues

Land can be viewed as a key resource for economic and other development processes. As noted in chapter 1, Bougainville is similar to many other Melanesian societies in that land is owned by the people as communal free-hold. This means that the landowners will have to be compensated if a particular piece of land is to be used for development. The nature of land disputes varies; some result from overlapping ownership claims by two or more groups (clans/tribes). Others are related to land abandoned by foreigners who fled due to the 1990s crisis and whose land is claimed by two or more groups. The most common civil disputes are between developers and the native landowners over compensation claims.

As previously noted, in Melanesians societies like Bougainville, landownership is culturally inherited. Land is not viewed as a commodity which people can buy and sell based on demand. However, in many areas this system is challenged by the modern world of demand-oriented markets. So now there are cases where people actually buy land from others.

The total land mass of Bougainville is about 9000 square kilometres, of which about 13 square kilometres is lakes (or swampy) and about half of the remaining topography hilly, or mountainous (Oliver 1991). Notwithstanding colonial-era land appropriation and alienation until recently 97.25 per cent of Bougainville remained under customary ownership (James 1985). About 2.75 per cent is distributed among state, missions’ (churches) and private ownership, the rest (97.25 per cent) being under customary land tenure (Autonomous Bougainville Government. Department of Lands 2013). Land is a valuable asset to Bougainvilleans for reasons discussed above (chapter 1) and below (chapter 5).
Given this background Bougainville has frequently experienced situations where development has been affected by land issues and/or disputes (Interview with ABG export officer 1 on 01 September 2014). This interviewee gave an example of a case in Tinputz district, north Bougainville, where the local people reclaimed an area of land containing a cocoa plantation (referred to as Raua plantation), when the foreign-owned company fled due to the crisis. In 2008 that company wanted to return and rehabilitate the plantation but the people who had since re-settled that land, prevented this, arguing that they had reclaimed their customary land which was stolen by foreigners.

One classical example of an economic development project affected by land-related issues is the closing and re-opening of the Panguna mine. Panguna’s re-commissioning was hindered by the difficulties of organizing about nine landowner groups having diverse views. Some argued for re-opening of the mine, while others said that it should only be opened after Bougainville gained full independence. Other groups wanted compensation for the past destruction (referred to above: chapter 1) prior to its re-opening (Autonomous Bougainville Government. Mining Department 2013).

Another project affected by land-usage related issues is the Torokina Oil Palm project. Since 2009, when this project commenced, the ABG has committed about PNGK 13 million (about A$ 6.5M) to its development. However, the project has not progressed since feasibility studies were conducted in 2011, principally because of landownership disputes among the traditional landowners (Autonomous Bougainville Government. Commerce Department 2014).
The relocation of the ABG’s HQ to Arawa is (where it was prior to the crisis) is another project affected by land disputes. In 1989, when government and BCL workers fled due to the escalation of violence during the Panguna mine-related crisis, the locals occupied the state-owned land and the town’s houses. When these illegal occupants were asked to leave the land and the houses they had occupied, they responded that they had reclaimed their traditional land which had been stolen by foreigners (Interview respondent ABG official 4 on 28 August 2014).

Because of its central position on Bougainville’s mainland, the relocation of the ABG’s HQ to Arawa is deemed as necessary to enable fair access to public goods and services by the people. The ABG’s current HQ in Buka, off the northern tip of Bougainville, is conveniently accessible only for the people of north Bougainville. The people from the south are most disadvantaged under the current arrangements. To access some government services they have to travel long distances, which incurs high transport costs.

Land-related issues also need to be addressed in-order to facilitate development processes. According to Routley (2014) land reform is viewed as a significant part of an environment which provides economic freedoms for development at both macro and micro levels. Land is a basic resource and land reform is an essential facilitator of the development process. Experiences in many states, including South Asia, reveal the economic development successes of states that undertook successful land reforms (Habimana & Hall 2014). Historically land reform was the prelude to economic transformation, including industrialisation (Routley 2014).
Given the importance of land reforms in development, in 2007-09 PNG took a major milestone toward facilitating development by enacting two pieces of legislation. The two Acts were the Land Groups Incorporation Act (enacted in March 2009) and the Land Registration (Customary Land) (Amendment) Act of 2007. These land reforms provided the opportunity for customary landowners to develop land for their own benefit, or the opportunity for investors to draw on an under-utilised resource. Chand (2009) notes that policy makers stated clearly that their goal was to empower customary landowners in PNG to release the ‘locked-up’ economic potential of their customary land. The reforms were geared to unlock this potential value. Applying this legislation by the customary landowners is voluntary, hence it’s effectiveness will be revealed only over time.

3.2.2 Mapping out an option for addressing land issues in Bougainville

Applying the PNG land reforms, especially the Land Groups Incorporation (ILG) Act of 2009, is an option that can be used to address Bougainville’s land issues (for details of the ILG process refer to appendix 1). The ILG process enables the protection of both landowners and developers through the following mechanisms:

1. The land is registered through a legal process;
2. Legitimate landowners are officially identified;
3. Landowners are participants in the process of identifying who owns the land and agreeing to the rights of the developers who will use their land;
4. The developer is issued a legal sub-lease to a block of land that has a legal title; and
5. Both landowners and developer are legally protected.
Currently the ABG is applying the ILG process in various development projects including the re-opening of the Panguna mine, and the Torokina Oil Palm Project. Some difficulties have been overcome. These include the costs involved (especially in producing birth certificates for the landowners and for the conduct of three separate surveys, as required by the ILG). There have also been some objections by nearby landowners sharing the same boundaries and people who have overlapping user rights to the same piece of land (Autonomous Bougainville Government. Department of Lands 2013). Nevertheless, the implementation of the ILG is appropriate to address most land issues and to encourage Bougainville’s development processes.

3.2.3 Law and order issues

The ineffectiveness of weapons disposal programs in Bougainville creates potential law and order problems. The illegal possession and use of firearms is widespread, both among individuals and groups. (eg. Mekamui and U-Vistract discussed above: chapter 1). Other factors that undermine peace building and weapons disposal is the illegal gun trafficking via the Solomon Islands and the recovery of WWII weapons and ordinance in Torokina, on the southern tip of Bougainville (elaborated in chapter 4 below). The possession of illegal weapons results in activities such as theft of vehicles or sabotage of properties and even killings, when disputes arise between individuals and groups (Autonomous Bougainville Government. Veterans Division 2013).

Many peace and reconciliation ceremonies are being conducted to settle crisis-related and even other disputes. Some claim that peace ceremonies have been
This means that the ceremonies are used as means to make money by those who claim to have crisis-related unresolved issues (Interview respondent ABG official 6 on 28 August 2014). The funds committed on the processes involved in conducting these ceremonies include the hire of vehicles, the purchase of food for refreshment, accommodation for officials, allowances for mediators or negotiators and other logistical support items. The above interviewee argued these ceremonies have had little impact in improving the law and order situation.

One example of the continuing lawlessness abetted by the illegal possession of weapons is the looting by armed thugs of Chinese stores in Arawa in 2014. These shops were established via partnerships between ABG and others with local entrepreneurs. According to the interviewee above, the reason for the looting was that foreigners were establishing businesses that local entrepreneurs were capable of operating. They argued that foreign investors should concentrate on large businesses for which the local people did not have capital and capacity (skills, technology and equipment) to operate.

The destruction of foreigners’ investments are counter-productive to economic development in Bougainville (Interview respondent ABG official 4 on 04 September 2014). This interviewee gave an example of the 2013 sabotage by some landowners of small-scale mining equipment owned by Tall Jay, a Malaysian company. This incident resulted from disputes over ownership of mineral residues in the former BCL mine waste disposal tailings as well as over benefit-sharing. These are examples of situations that adversely affect economic development in Bougainville.
Other factors that limit Bougainville’s development are displayed in the Figure 6 below. This figure is derived from interviews with DFAT officials, where they identified needed improvements in the ABG’s performance.

**Figure 6: Areas that the ABG needs to improve on to pursue development**

Based on the Figure 6 (above) 25 per cent of the DFAT officials interviewed argued that there is a need for improvement in the four aspects indicated. Of the two prominent issues discussed above – land reform and civil order-, only one, law and order was raised by DFAT interviewees. The other three areas mentioned by DFAT interviewees (see Figure 6) are more to do with improving the performance and responsibility of the ABG’s public service. This response probably is because DFAT deals directly with the ABG and has no involvement in land reform issues.

Above I have highlighted challenges that affect development processes in Bougainville. If better solutions can be provided to these problems, (such as those I
proposed for land issues) an environment for development can be created, to allow exploitation of Bougainville’s resources for economic development.

3. Mapping out Bougainville's economic development

As highlighted in chapter 1, Bougainville has natural resources that can be exploited for the purpose of economic development. In most areas there is work in progress in exploiting these resources for economic development, by both the ABG and other developers.

2.3.1 The Potential of Bougainvillean Fisheries

Based on records collected from the PNG NFA (National Fisheries Authority), Bougainville has potential marine resources including: inland river fisheries, aquaculture, inshore fisheries, beche-de-mer, trochus, finfish, prawn and lobster. There are also offshore shark and tuna fisheries. For reasons of space, this study is will take into account only two of these resources, tuna and sea-weed. Based on the PNG:NFA records, about 30 per cent (about 558,650 metric tonnes) of the total volume of PNG’s tuna fisheries comes from Bougainville waters (PNG Government. National Fisheries Authority 2011).
### Figure 7: Volume and species of fish caught in Bougainville waters: 2008-10

<table>
<thead>
<tr>
<th>Year</th>
<th>Border</th>
<th>Catch in metric tonnes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Bigeye</td>
<td>Skipjack</td>
</tr>
<tr>
<td>2008</td>
<td>Bougainville Waters</td>
<td>1,525.50</td>
<td>106,209.30</td>
</tr>
<tr>
<td></td>
<td>PNG EEZ</td>
<td>3,092.80</td>
<td>324,951.30</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>33.03</td>
<td>24.63</td>
</tr>
<tr>
<td>2009</td>
<td>Bougainville Waters</td>
<td>832.70</td>
<td>70,374.10</td>
</tr>
<tr>
<td></td>
<td>PNG EEZ</td>
<td>3,061.90</td>
<td>289,102.30</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>21.38</td>
<td>19.58</td>
</tr>
<tr>
<td>2010</td>
<td>Bougainville Waters</td>
<td>2,184.70</td>
<td>17,032.70</td>
</tr>
<tr>
<td></td>
<td>PNG EEZ</td>
<td>5,689.50</td>
<td>410,579.10</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>27.75</td>
<td>30.13</td>
</tr>
</tbody>
</table>


Figure 7 shows Bougainville has some potential for commercial fisheries development (cf. PNG map indicating availability of tuna fish stock in Bougainville waters in appendix 2).

**Mapping out potential for fisheries development in Bougainville**

Under the current arrangement of Bougainville as an autonomous region within PNG, benefits from fisheries can be achieved by implementing the BPA, Part (e) articles 85–88. The provisions are:

85. The National government will provide for the autonomous Bougainville government to be represented on:

- (a) delegations negotiating access and other fisheries agreements regarding Bougainville waters and waters beyond the guaranteed three nautical mile...
limit and within the EEZ (Exclusive Economic Zone) and the continental shelf associated with Bougainville territory; and
(b) bodies responsible for determining total allowable catches, license numbers and reservation of licenses for domestic fishers in such waters.

86. An agreed formula (based on derivation less costs) will provide for PNG National government fishing revenues from fishing in those waters to be distributed to the autonomous Bougainville government.

87. The autonomous Bougainville government will decide on the allocation of an agreed quota of domestic fishing licenses for highly migratory and straddling fish stocks.

88. The autonomous Bougainville government will be responsible for the sustainable management of other fisheries in Bougainville’s waters (Bougainville Peace Agreement 2001).

Deriving from the articles BPA 85-87 (above) potential fisheries development in Bougainville can occur in two areas: the EEZ and the 3NM (3 nautical miles) zone. The EEZ is regulated by the laws of the sea while the 3NM is regarded as the local fishing zone (PNG Government. National Fisheries Authority 2011).

In the case of the EEZ, there is a need to establish policy frameworks and legislation (cf. article 86, above) for Bougainville to benefit from its fishery resources under the current autonomy arrangement. In the case of the 3NM, there is need to more intensely develop an in-shore fisheries industry on Bougainville. This will involve establishing both policy and/or legislation, as well as infrastructure development (Bougainville Peace Agreement 2001).
The processes of formalising and implementing the above provisions were initiated in 2011. The negotiations for benefit-sharing for EEZ fisheries have been deadlocked. The PNG: NFA and the ABG have not agreed on a benefit-sharing formula (article 86: above). Basically the PNG: NFA is reluctant to release a portion of the fisheries benefits to the ABG (Autonomous Bougainville Government. Commerce Department 2014).

Policy for fisheries management in the pacific region

One method to overcome this dispute and to develop a benefit-sharing process is the ‘Palau Agreement’ framework used to manage fisheries in Pacific island nations. This can be adapted for the purpose of benefit-sharing between the PNG and ABG governments.

Under the ‘Palau Agreement’ a VDS (Vessel Day Scheme) was approved by the Pacific Island nations including PNG, effective as of December 2007. The VDS is redefined constantly through the PNA (Parties to the Nauru Agreement 1982, which includes PNG). The latest records accessible for this study are those of 2013 (Tamate 2014). The VDS covered the management of migratory fish stocks, particularly tuna, with the participation of all DWFNs (distant water fishing nations) over central and western Pacific waters. In the VDS system the foreign fishing companies are charged for the number of days they fish over certain waters (their “effort”). Fishing effort is charged, not the quantity (or total volume) of the fish caught. The VDS instrument can serve as a basis for Bougainville to share fisheries benefits from PNG waters.
Bougainville’s revenue potential from the fisheries industry

All the figures used below are collected for both the PNG: NFA and the ABG: Department of Commerce, (2014). In PNG (including Bougainville) the total number of fishing days in 2014 was 10,072 days, out of which 3,021 days were allocated for Bougainville waters (as designated by the boundary when Bougainville was known as North Solomons Province. (PNG Government. National Fisheries Authority 2011). The 2013 VDS rate according to Dornan (2015) is A$ 7,660 (US$6,000) for each vessel per day. By simple calculations the estimated value of migratory tuna fisheries in Bougainville waters were A$7,660 per vessel day x 3,021 days = A$23,140,860 (about PNGK46,281,720). This regulatory regime requires some cost-sharing, particularly the monitoring and surveillance of the foreign fishing boats. Bougainville does not have the capacity to do this on its own. So the PNG: NFA will continue with such activities until Bougainville gains this capacity. Simple cost-recovery systems can recompense the PNG: NFA for this assistance. Consequently a long-term arrangement for transfer of the revenues from PNG: NFA to the ABG could be phased over a period of time (Autonomous Bougainville Government. Commerce Department 2014).

A well-managed fisheries industry, especially in the Pacific region, can contribute to the economic well-being of these states. Fisheries play an essential role in the livelihoods of millions of people worldwide, both directly and indirectly (Siaosi, Hsiang-Wen & Huang 2012). The development of fisheries have greatly benefited states and territories in the WCPO (Western and Central Pacific Ocean). The WCPO includes 200 high islands, 2500 low islands and a number of atolls that constitute the 22 countries and territories of the PICs (Pacific Island Countries).
For example; in 2013 the government of Tuvalu earned A$ 18.2 million (about PNGK36.4M) which was 55 per cent of its domestic revenues. Additionally the foreign fishing companies employ local Pacific islanders as official observers of fishing activities. In Tuvalu about 900 locals are employed as observers, which is 45 per cent of the formal work force and 9 per cent of the total population (Dornan 2015).

Partner states for fishing in Bougainville waters are available, especially from the neighbouring Asian countries. The current client states operating the VDC include; Taiwan, Thailand, Japan and Malaysia (PNG Government. National Fisheries Authority 2011). As seen above, fisheries could also provide employment for local Bougainvilleans as observers of the activities of the foreign fishing companies.

*Three Nautical miles fisheries*

Within the local (3NM) fishing zone there is also income potential for local fishermen. Fish caught within the 3 NM are usually sold, either smoked or fresh, at local or town markets and provide a source of income for local fishermen. In some cases local businessman also buy fresh fish from local fishermen to sell as frozen goods in their shops.

Off-shore fish farming is also taking place in Bougainville, particularly in Kunua and Torokina off the south-west coast of Bougainville. Local people are building fish ponds to breed fish of various species. The NFA allocates PNGK 3 million (about A$ 1.5M) annually to each province, including Bougainville, for development of fisheries both on and offshore. The Bougainville fishing industry is potentially
capable of generating sales of PNGK 300 million (about A$ 150M) annually (PNG Government. National Fisheries Authority 2011).

Figure 8: Locally constructed fish pond in Central Bougainville

One example of potential fisheries development, here of aquaculture, is the Meti and Lopa fishpond project in Central Bougainville. This is a diversified project; a dam was built to operate a mini hydro – electricity plant and in the dam fish of various species are bred. The fish from the pond is sold at local markets.

There are several such fish ponds in many parts of Bougainville. People use local knowledge to construct fish ponds and farm fish. The impediments to this industry are, the requisite skills to improve fish farming, the management of fish ponds and establishment of sustainable/profitable markets.

Some fish ponds have been washed away by heavy floods due to poor drainage systems. Others become unsuitable for breeding fish due to erosion silting up of the
ponds and the introduction of foreign objects polluting the ponds (Autonomous Bougainville Government. Primary Industry Department 2014).

The development of a benefit-sharing formulae between PNG: NFA and the ABG and the 3 NM zone’s fishery potential indicates that fisheries have the potential to contribute to Bougainville’s economic development.

3.3.2 The potential for Sea-weed

There is also potential for sea-weed production in Bougainville. This industry requires only simple technology and farming and processing is cheap. Experience shows that about A$1500 (PNGK3000) is sufficient to develop a one hectare sea-weed farm. This is capable of producing 25 tonnes of dried sea-weed, worth about A$ 25,000 (about PNGK 50,000). The farming (culturing) of sea-weed takes six weeks before it is ready for harvest. There is no specific life span for sea-weed; the only risks are strong winds and sea tides that can destroy the plots, plus a certain species of fish that eats sea-weeds (Autonomous Bougainville Government. Commerce Department 2014).

Currently in the trial projects on the Carterets Islands about 40 hectares of sea-weed has been developed. This is distributed in 400-500 plots of 10 square metre farms. The ABG has established a company that purchases the sea-weed from local farmers and exports it overseas.

For example, in August, 2014 the dried sea-weed stock available for export was 100,826.00 tonnes, which was worth about A$85,243.10 (PNGK 170486.2M). So far there have been two shipments to China, one in 2013 another in early 2014.
The current operational activities involved in sea-weed farming, reveal a need for improved shipping availability, to transport dried sea-weed from the outer islands to Buka. There is also a need for a storage shed in Buka town, so dried sea-weed can be stored awaiting shipment overseas. The trial farms developed in the Carterets Islands are progressing well (Autonomous Bougainville Government. Commerce Department 2014).

Figure 9: Sea-weed farming in the Carteret’s islands of Bougainville

Mapping out the potential for development of sea-weed farming

Given the archipelagic nature of Bougainville, it is feasible to develop sea-weed in other areas especially the north-coast area of the Kunua and Torokina districts. To establish the trial farms in Carterets Islands, a farmer from the Solomon Islands was
invited by the ABG to teach them the methods of farming sea-weed. Through training the skills and techniques are being passed on to new farmers and even some better techniques are developed based on field experience.

The rationale of sea-weed farming is to provide cash income opportunities for people living on the outer-atolls of Bougainville. These small islands lack resources that people can develop to earn income, so sea-weed farming is appropriate for them (Autonomous Bougainville Government. Commerce Department 2014).

3.3.3 Agriculture: Cash crop farming potential:

As alluded to above (chapter 1), in Bougainville cash cropping is the main means for most people to earn income. Most important are cocoa and copra. Cocoa is a common cash crop, mostly in the south and parts of the north and central regions, while copra is common in the north and various parts of central Bougainville. These cash crop farms are usually established by families, as a source of income for basic needs (Oliver 1991). Below Figure 10 details various agricultural activities and the number of people involved.
This data shows that the people of Bougainville are involved in a wide range of agriculture-based enterprises as a means of securing cash income. This variation may result from various factors, including the suitability of climate or weather conditions, soil nutrition for selected crops, and the variability of type of projects in respective particular districts, transportation and communication-related issues, plus the availability of markets. Below is another figure that shows different sources of income throughout all districts in the Bougainville region.
The data above (Figures 10 and 11) reveals the number of people who participate in various agricultural activities as means to earn their living. The level of participation by the people could be a measure both of the people’s agricultural base and their economic development. The data in Figure 11 also reveals that Bougainville has a diversified suite of agricultural activities, in the sense that some activities found in some parts are rarely or even never found in other areas. For example, cocoa is common in the south while marine products are mostly exploited in the north and off-shore atolls.
3.3.4 Cocoa

As referred to above (chapter 1), cocoa farming was introduced by the colonizers as early as 1914. By the 1970s Bougainville was one of the largest cocoa producing provinces in PNG. This was reversed from 1989, when the civil crisis severely affected cocoa production. After the crisis (1997) production began gradually to recover. There are about 35,000 families growing cocoa in Bougainville and approximately 65-70 000 hectares of land has been used for cocoa farming.

Current production of about 15 – 20,000 tonnes a year, at 300 kilograms per hectare, implies that there is between 65-70,000 hectares of cocoa farms that are capable of bearing harvestable cocoa. The records between 2009 and 2013 show an increase of production by 30 per cent. The estimated gross income of the cocoa industry is PNGK94-100 million (about A$ 47-50M) per year, and accounts for about two thirds of the Bougainville’s GDP (Autonomous Bougainville Government. Commerce Department 2014).

To boost the cocoa industry the ABG developed a ten year cocoa production improvement program to redevelop the 65-70,000 hectares of existing cocoa blocks across Bougainville. The proposal includes inter-cropping with rice. It is proposed that rice will be farmed in between the newly-planted cocoa trees. It is anticipated that the rice will be harvested two times within 16 months, before the cocoa trees have matured and are ready to bear pods (Autonomous Bougainville Government. Commerce Department 2014).

Inter-cropping contributed greatly to the growth of the cocoa industry in Ghana (Opoku, Oppong & Acheampong 2012). There cocoa is traditionally grown in
association with food crops such as cocoyam, yam, maize, plantain, cassava, ‘egusi’ melon, cowpea, pineapple, okra, pepper and other food crops.

The benefits of intercropping cocoa with food crops during its establishment have been reported to include the provision of food for the farm household, the generation of income during the immature phase of cocoa, thereby partly offsetting the cost of establishment. It also aids in reducing the cost of weed control, reduces diseases caused by insects and pests, and provides temporary shade for the young cocoa seedlings. However, there may be some competition for soil nutrients between the food crops and the cocoa seedlings.

Figures 12 and 13 below show projections of cocoa production volumes in tonnes and the potential revenues that the ABG intends to generate from its 10 year cocoa development plan.

Figure 12: Projected volumes of ABG’s 10 years cocoa development plan

Source: Autonomous Bougainville Government. Commerce Department (2013)
Deriving from the discussions and the statistics above, it is clear that Bougainville has the potential to further expand its cocoa industry. Cocoa farming is deemed to be viable for various reasons. Among these reasons are; the availability of traditionally owned land, the relatively low level of skills and technology required and the projections for high demand in the near future (these factors are further elaborated below in chapter 5). Bougainville has obvious potential for a cocoa industry-based economy. The challenges related to the development of this industry will be analysed below in the case study (chapter 5).

3.3.5 Copra

Copra, which is the second most important cash crop after cocoa, is an important source of income in parts of north Bougainville. This is shown by the approximate production for 2011 of 12,000 tonnes (cf. Figure 14 below). Copra, which is
produced from the coconut’s flesh, is not a seasonal cash crop; it bears fruit (coconuts) throughout the year, unlike cocoa which has high yielding seasons (as discussed in chapter 5 below).

Figure 14: Total tonnage of copra production in North Bougainville in 2011

Sources: Autonomous Bougainville Government. Department of Primary Industry (2013)

It has been shown that copra growers in PNG tend to be “income-targeting” farmers; so production can be inversely correlated with price (Gerritsen 1985). This income-targeting is probably in part because farmers lack any understanding of the international market and price movements. So they tend to react conservatively. They target income to pay for school fees, basic clothing, kerosene, etc.

One way of reducing this income-targeting problem for peasant copra production is to give the copra growers access to value-adding and hence more price certainty. So the establishment of a copra mill in 2013, in Buka town, has increased the producer price of copra and positively motivated the local producers. Bougainville’s copra will
be value-added and shipped to other provinces of PNG, or even exported overseas if export access requirements are established. Some of the coconut oil produced by this mill could be consumed locally by the people of Bougainville, or even further refined to other consumable products that can be exported to PNG or overseas (Autonomous Bougainville Government. Primary Industry Department 2014).

**Mapping the potential of copra development in Bougainville**

As reflected in the graph (above) Bougainville has potential for copra development. Currently most of the product is marketed as low-value smoked copra and some coconut oil (if milled in Bougainville) in the absence of facilities for down-stream processing to consumable products or high value consumable vegetable oil. A study by Kadere et al. (2009), on the production and marketing of coconut-based products was conducted in the coastal region of Kenya between 2002 and 2003. Because the copra production of this area has similarities to Bougainville, this is one model which has some principles that can be adapted to increase the value of Bougainville’s copra production.

In the Kenyan case the coastal region’s copra production was 48,402 metric tonnes per year from about 4.84 million coconut trees. The yearly income generated from coconut-based products was Kshs.856.01 million ($US 1.10M) per year. Kenya’s average income per year was estimated at Kshs.63.80 thousand ($US 818), while farmers earned Kshs.41.12 thousand ($US 527) per year. The Kenyan study indicated the need for proper government policy through the establishment of coconut boards so as to monitor production, processing and marketing of the coconut-based products.
The conclusions of the Kenyan study indicate that in Bougainville there is a need to facilitate down-stream processing of coconut products. To achieve this will involve skills training for the farmers and also technical assistance for establishment of the factories for processing copra.

3.3.6 Rice

Currently there are about 500 rice farmers throughout Bougainville. For example, in north Bougainville’s Selau/Suir district the 200 hectares New Masawa rice farm began in 2011. Harvesting had begun in 2013 and full production is expected by 2017. There is also rice cultivation in Kunua district and in Solos area on Buka Island. In Kunua alone more than two and half tonnes of rice was produced in 2013, and in 2014 about 20 hectares of new land was used to further cultivate rice. Rice is also cultivated in south Bougainville, specifically in Siwai district by a local company Likui Trading. This company attempts to meet the demand for rice in the local population but the supply is low and insufficient even for demand in the Siwai district (Autonomous Bougainville Government. Commerce Department 2014).

Bougainville’s soil is generally suitable for rice farming and its cultivation is progressing promisingly (Interview respondent ABG official 8 on 29 August 2014). This interviewee argued that the development of rice needs funding to support the local farmers in the areas of skills training in developing and managing nurseries, trans-planting seedlings and managing the rice fields, as well as for harvesting, processing, packing and storage to ready the product for market. The rice farmers’ strategy is to start with supply for local consumption and later move into bigger markets.
Indication of local demand for rice

The high demand for rice in Bougainville is currently met by suppliers from PNG and overseas. According to data collected in Buka from Trukai Rice Industry (one of the suppliers of rice in Bougainville), an average of 814 tonnes of rice is consumed every month in Bougainville. The highest recorded monthly data on supply of rice to Bougainville was in November 2013, when 108 tonnes (which was highest in the whole of PNG) of rice was consumed. Given that the current quantity of rice produced by local companies is insufficient to meet the local demand, most rice is still imported from overseas and PNG (Autonomous Bougainville Government. Commerce Department 2014). So the “domestic” market for rice in Bougainville suggests that the industry could profitably expand, benefiting Bougainville’s net current account balance.

Mapping out the potential for rice development in Bougainville

The approach used by the JICA and Oxfam to develop surplus rice for Senegal (Demont & Rizzotto 2012) is one option appropriate for developing rice in Bougainville. JICA’s approach involved the whole supply chain, from production to consumption. The process involved initiatives to improve the capacity of the full range of stakeholders in rice production. It has attempted to address the problem of productivity, technology transfer, quality enhancement, access to credit, and distribution and marketing.

Oxfam’s focus was to, in a sustainable way, contribute to the food security of the Senegalese people by improving their living conditions through the promotion of local rice. The development strategy involved four objectives: improving quality and
packaging, improving transport, increasing market share and creating points of sale at large urban markets (especially in Dakar). A marketing strategy focused on the quality and branding of the rice. These strategies resulted in Senegal’s rice production increasing to 455,000 tonnes by 2011 (Demont & Rizzotto 2012).

Nigeria’s rice development model also has some aspects that can be adapted to Bougainville. According to Afolami et al. (2012), Nigeria’s rice production is dominated by small-scale, resource-poor farmers, who produce over 90 per cent of the food consumed in the country. Farm production and productivity in the farms was limited by lack of access to agricultural inputs. To overcome these constraints, farmers formed cooperative groups to more efficiently use the scarce resources of land, labour, skills and capital. One of their innovations was efficient irrigation scheduling systems (Akinbile 2013). These innovations were aimed at promotion of inter-group collaboration, which broadened the local economies of scale and strengthened the market and bargaining power of the farmers. By working together, farmers can realize the scale economies of bulk acquisition and enter into more stable commercial arrangements with suppliers or processors (Afolami et al. 2012).

Rice production in Bougainville is economically viable given the availability of land and the high demand from local consumption.

3.3.8 Oil Palm

The ABG has begun developing ‘Torokina Oil Palm Development’ in the Torokina district, on the south-west tip of Bougainville. Based on the feasibility study conducted by the developers (Hakau Investment Limited), the capital required for a
5,000 hectares oil palm plantation field development is PNGK 45 million (about A$ 22.5M) : This expenditure includes;

- PNGK 20 million (about A$10 M) for establishment of infrastructure
- PNGK 12.5 million (about A$ 6.25M) for transport
- PNGK6.25 million (about A$3.125M) for utilities
- PNGK3.75 million (about A$1.87M) for labour
- PNGK3.125 million (about A$ 1.56M) for administration

This project was estimated to be completed with full production capacity over a six year period (Torokina Oil Palm Project Report 2011).

The project proponents also point to the advantage of the types of soil on Bougainville as an indicator the project can succeed. Many areas of Bougainville have soils that are young, particularly in areas where dimentation (volcanoes are depositing ash) is occurring. These young soils have a good potential for agricultural production because they can provide adequate amounts of water and nutrients to plants. Based on the feasibility study (referred to above) Bougainville soils are generally classified as “andisols, and partially impregnated entisols and inceptisols”. This type of soil refers to volcanic ash and very young soils. Torokina District in particular has young soils compared to other parts of the region and its soil has no distinct profile and may be classified as a mixture of “entisols, histosol, and inceptisols”. These are rich and very suitable for growing oil palm (Torokina Oil Palm Project Report 2011).
The revenue projections for the project also seem positive. Revenues were expected to increase after the sixth year when the project is fully completed and begins full production. The projected return after 10 years is PNGK 570 million (about A$285M). The expected total gross value is over PNGK 869.8 million (about A$ 434.9M) (Torokina Oil Palm Project Report 2011).

Mapping out the potential for oil palm development

As mentioned above the development of Torokina Oil Palm is underway. Feasibility studies have been completed, although work has temporarily stopped because of a land dispute. In evaluating the Torokina oil palm project, studies undertaken to enhance the production and profitability of the oil palm sector in Ghana are worth taking into account.

The problem in Ghana was that the technical innovations at the farm level were insufficient to promote sustainable oil palm production and to alleviate poverty because of overriding institutional constraints being larger than farms’ incomes. Oil palm is considered a national priority crop because of its potential for reducing poverty. It has a wide geographical coverage and it is considered as both a food and a cash crop (Adjei-Nsiah, Sakyi-Dawson & Kuyper 2012).

The Ghanaian oil palm industry is constituted of small private farms that produce about 80 per cent of the crop. Large-scale industrial estates, with their network of smallholder and out-grower farmers, produced about 20 per cent. The latter is the system used in West New Britain Province, PNG (Koczberski & George 2003).

Farmers were motivated to invest in increased production and improved sustainability when institutional conditions that enabled small-scale processors to
be integrated into the value chain were created and they were assisted in negotiating better deals for themselves with the processors. In terms of improving yields there was active support for farmers to increase production as hybrid planting material, particularly *tenera* hybrids, were distributed to them. Tenancy rules and management arrangements were developed that improved the income of tenant farmers and encourage them to invest in increased productivity (Adjei-Nsiah, Sakyi-Dawson & Kuyper 2012).

The market demand for palm oil is strong and expected to increase as living standards improve in Asia. Al-abbas, Ibrahim and Sanagi (2012) showed that the white bio-oil produced from oil palm consists of non-toxic hydrocarbons and is a good alternative to the white mineral oil significant in the food industry, as well as for cosmetics and pharmaceutical products. Furthermore, recycled palm oil could be used as a bio-fuel, equivalent to diesel and fuel oil. If the process were to be carried out on a large scale, it would provide a cheaper, good quality fuel that could tap into increasing global demand, especially for transport fuels (Bakoumé et al. 2013).

So we can safely conclude that the palm oil industry has economic development potential for Bougainville. The model used in Africa and West New Britain, where small holders sell their harvest to the main nucleus oil palm companies, is actually adapted to existing capacities. This model can be applied in Bougainville, so the landowners can become real participants and beneficiaries of this industry.
3.3.9 Coffee

Historically coffee was never commercially farmed in Bougainville. This cash crop was first introduced to Bougainville in 2009 in the post-conflict restoration period. Since 2009 demonstration plots of coffee have been established in many districts throughout Bougainville (Interview respondent ABG officer 8 on 29 August 2014). This interviewee claimed that the rationale for establishing coffee in Bougainville is that the people who live in hilly, cold places (especially parts of Panguna and Kieta districts), where other cash crops like cocoa and coconut are not viable, can cultivate coffee as a cash crop.

Mapping out the potential for coffee development in Bougainville

Since 2009 more than 20,000 cuttings and 15,000 seedlings have been distributed for the purpose of establishing coffee bush nurseries in various districts including; Bana Buin, Siwai, Panguna, Wakunai, Tinputz, Kunua and Buka island. Currently there are more than 500 coffee farmers throughout Bougainville. Currently there is no production, as the coffee trees have not yet matured. The next steps needed in developing this industry includes training of farmers, both in the maintenance of their farms and in processing both wet and dry beans in preparation for local and overseas markets (Autonomous Bougainville Government. Primary Industry Department 2014).

Coffee, like other cash crops, can be a source of income for the people (farmers) and also contributes to the nation’s economy (Mamani-Pati et al. 2012). In PNG people benefit from the coffee industry – mainly in the Highlands region – as growers, transporters, business persons and even in processing and distribution of the products (West 2013). Coffee is Rwanda’s main export, accounting for 60 per
cent of its GDP. Across the world there are about 25 million small-holder producers who rely on coffee for a living. About five million people are employed in the cultivation and harvesting of coffee (Banjoko 2011).

Bougainville has some economic development potential from the coffee industry, both for the farmers and as contribution to the territory’s economy. Because Brazil and Colombia grow the majority of the world’s coffee, the prices are principally set by their supply and can fluctuate widely from year to year.

## 3.3.10 The potential of the Mining Industry

The mining industry in Bougainville attracts some sensitivity, given the issues related to the former Panguna mine (referred to above: chapter 1) which escalated into a violent conflict and resulted in massive destruction of property and the loss of many lives. The origins of the mining industry in Bougainville date back to 1930, when prospectors discovered gold at Kupei and Panguna, in central Bougainville. According to Baldwin, Swain and Clark (1978) production in these two locations began with small scale copper and gold mining. This ended with the Japanese occupation of Bougainville during World War II.

According to Eastoe (1978) and Baumer and Fraser (1975), prospecting resumed on Bougainville in the early 1960s. This resulted in the discovery of huge deposits of minerals at Crown Prince Range (the former Panguna mine site). The economic potential of Bougainville’s mining industry cannot presently be accurately calculated because of a paucity of exploration. However, according to the OMS (Order of Magnitude Study) conducted by BCL in 2012, the Panguna mine is economically viable based on the key assumption of mining up to 100 million tonnes of ore and...
refining 60 million tonnes of copper ore per year. Apart from copper, Panguna’s reserves contain other minerals, including gold which accounts for about 19 million ounces (Coleman 2013).

The 2004 Bougainville Copper Ltd. annual report also reveals the revenue generated by the Panguna mine over the 17 years (1972 – 1989) of its operation. The summary of minerals extracted over this period included; 3 million tonnes of copper, 306 tonnes of gold and 784 tonnes of silver (for total mineral value and contents extracted by BCL refer to appendix 3). In that time the company treated 5.2 billion tonnes of ore. The unmined reserves - based on estimates recorded in 1999 - comprise about 496 million tonnes of ore, with a copper-gold ratio of 45:55 per cent (Bougainville Copper Limited Annual Report 2005).

In the 1980s the Panguna mine accounted for about 44 per cent of PNG’s exports by value and its tax payments 17 per cent of PNG’s budget revenue. A total of PNGK1,088 million (about A$ 540M) was paid to the PNG government, which is a tax rate of 62 per cent of net cash generated within the mine’s 17 years of operation. A total of PNGK114 million (about A$57M) was paid to the North Solomons Provincial Government and landowners and shareholders (Bougainville Copper Limited Annual Report 2005).
Current mining industry development in Bougainville

Mining in Bougainville is of two types: large-scale mechanised mining and small-scale or alluvial mining. Large-scale mining issues are dealt with by the ABG and mainly relate to the possible re-commissioning of the Panguna mine. Alluvial mining is done by the local people on mineral deposits on their traditionally owned land.

As referred to in chapter 1, the decision to re-open the Panguna mine was reached at a JSB meeting at Alotau, in Milne Bay in 2008. The outcome of this meeting was the endorsement of a 15 step framework developed jointly by the PNG government and ABG leaders and officials with assistance from DFAT funded advisers. This was aimed to facilitate the processes involved in the drawdown of mining powers to the ABG, as outlined in the appendix 4 below (Autonomous Bougainville Government. Mining Department 2013).
The decision to re-commission the Panguna mine was reinforced by the creation of ABG’s Panguna mine negotiations office, headed by a director. This was aimed to boost the implementation of the 15 steps framework for the transfer of the PNG’s mining powers to the ABG. Currently the implementation of this framework is at the stages involving establishment of the ABG’s Mining laws.

Consultations regarding the enacting of these bills were conducted widely throughout Bougainville and main centres of PNG. Eventually the ABG House of Representatives passed a Transitional Mining law in August 2014, followed by enactment of the Bougainville’s Mining law in March 2015. However, some ex-combatants and landowner groups disavowed some provisions (eg. temporary alienation of customary land) of this mining law, which might affect it’s implementation (Autonomous Bougainville Government. Mining Department 2013).

Issues related to mining - including share holdings and the distribution of benefits - have arisen in communities around the world, which have increasingly come to demand more involvement in decision making for local mining projects (Prno 2013). Local stakeholders are demanding a greater share of benefits, and assurances that mining development will be conducted safely and responsibly.

Prno (2013) also notes that full legal compliance with state environmental regulations has become an insufficient means of satisfying society’s expectations with regards to the environmental effects of mining. There is now a recognized need for mining companies to gain an additional SLO (Social Licence to Operate) in order to avoid potentially costly conflict and exposure to business risks. In many developing states local groups have been taking control over mining areas and often
organizing insurgencies against the government or the state (Okoh 2013). Natural resources-related conflicts have occurred in several African states, including Ghana, Nigeria, Tanzania and, more recently, Mali. These are attributable to grievances associated with unequal distribution of resource rents, as well as over land use and ownership and environmental pollution.

In the case of Bougainville there are cases where landowners and even former combatants (BRAs) act against ABG and PNG government officers who are involved in facilitating the re-opening of the Panguna mine. For example, there were instances where government officials were disrupted by landowners and ex-combatants in Panguna mine-affected areas while they were conducting consultations in preparation for the enactment of the Bougainville mining laws (Autonomous Bougainville Government. Mining Department 2013). So Bougainville is not immune to the disputes and even armed uprisings that have occurred over mining in other developing states.

Alluvial mining

The main alluvial mining sites are the BCL tailings dumps, the Panguna mine pit and new un-mined areas at Moroni along the port-mine access road. Other areas include Manetai in the Kieta district, Karato, Raruma, Nagareke and Bruve in the inland of Torokina district and Lulolu in Buin district. On average at least 10 - 15,000 people are involved in alluvial mining. They extract about 3-5 kilograms of refined gold per day on average from these locations. The success of this industry is inhibited by a lack of proper refining machinery and a sustainable market in Bougainville (Autonomous Bougainville Government. Commerce Department 2014).
Alluvial mining is a significant economic activity (Interview respondents DFAT official 3 on 09 September 2014). It provides a cash income for people during the off-season periods for cash crops like cocoa and when pests and diseases (currently cocoa pod borer: discussed below: chapter 5) attacks these crops. Alluvial mining generates about PNGK18 million (about A$9M) per year. One Interview respondent (ABG officer 2 on 20 August 2014) claimed that the mining industry has such a huge revenue potential that it alone could be sufficient to propel the ABG’s economic recovery and future growth.

However mining can lead to pollution and environmental devastation. Such were the very issues that led to the Bougainville’s destructive conflict. So reliance on mining to boost Bougainville’s economic development risks a return to the grievances that led to the 1989-97 civil conflict.

3.3.5 Other informal economic sectors

Informal economic sectors refer to economic activities that people are involved in to earn money to sustain their lives. Among these are:

Fresh food markets

There are both town and community or village markets where people sell their garden produce. The variety of food sold includes kaukau, yam, taro, banana, corn, peanuts, cucumber, pawpaw, water melon and other fruits and vegetables. People also sell fresh or smoked fish. Informal markets are avenues where people earn cash supplementary to their main economic activity (e.g. subsistence farming).
Tourism and sales of handicrafts

In Bougainville there are some famous WWII sites that attract tourists - like Numanuma Track, Kangu and Torokina, where fierce fighting took place. In July 2014 some Japanese came to Torokina and collected the remains of Japanese soldiers who died during World War II. There may be a small potential market for ‘war’ tourism. There are some handicraft sales to tourists and foreigners at local markets. The main crafts are traditional (Buin or Buka) baskets, billums (traditional string bags) and other decorative carvings (Autonomous Bougainville Government. Commerce Department 2014).

Bougainville has resources that can be utilised to pursue economic development. Consistent with the rationale of this study. DFAT aid can be used to support the development of these resources to assist Bougainville’s future economic development.

In facilitating economic development for Bougainville, DFAT aid resources can be utilized, both directly for investments and indirectly, to facilitate economic development processes (land issues, law and order, infrastructure development, HR capacity building, as well as for the development of policies and legislation). These areas need to be analysed and mapped out carefully to identify the type and quantity of aid resources to be provided to address these development needs. However, the elements that make aid-driven development effective (ref. chapter 2) should be taken into account in implementing selected projects.
Some specific examples for which DFAT aid could be used include: building more local or “road-side” markets in communities, or providing equipment for panning gold (panning dish and gold carpet) for alluvial miners. Assistance to the local fishermen could include the supply of fishing gear (hooks, fishing-lines/nets, baits/lures) and also the tools/materials (wood cutting tools such as chisels, as well as paints) required to build and maintain their traditional dugout fishing canoes. Suitable assistance for sea-weed farming is a ship of reasonable size which could be used to transport dried sea-weed to point of sales. This could be owned and managed by the local level governments (Council of Elders: cf. above: chapter 3).

Another important infrastructure input to which DFAT aid could contribute is the building and maintenance of feeder-roads (even foot-bridges and/or foot-paths through the forest and mountains), which people use to access main roads and urban centres. For subsistence farmer (growers of, local vegetables, kaukau, yams, bananas, cucumbers and sugar-canes) this would reduce the difficulties of transportation of their produce to urban markets.

These examples are aimed to demonstrate how DFAT aid can be used to assist people directly to generate income and improve their livelihoods.
4. Summary

Notwithstanding that Bougainville is a dependent SIDS as well as a post-conflict territory, it has some potential assets and resources that can be exploited for its future economic development. The main economic development possibilities for Bougainville include mining of minerals (gold, copper and silver), the agricultural sector (cocoa, copra, coffee, rice and oil palm) and the exploitation of marine resources (fish and sea-weed). Tourism and the informal economic sector provide lesser development options.

On the other hand there are factors that constrain the pursuit of Bougainville’s economic development. The main hindrances to economic development are factors related to Bougainville as a post-conflict and SIDS territory. Post-conflict related hindrances centre around persisting lawlessness, which creates insecurity for economic activities and investor confidence. Being a SIDS means that Bougainville exhibits scale characteristics that render economic development difficult. There are also cultural values and practices that constrain economic development.

A major aspect in this regard is the communal ownership of land by the people, which leads to disputes over ownership among the locals or even with developers of projects that use land. Developers can face a sovereign risk if landowners withdraw their approval after a period of time. This risk may inhibit investment.

In this study I will explore the possibility of utilizing DFAT aid, both directly in infrastructure investment for Bougainville’s economic development and indirectly, by addressing institutional factors that constrain the development of Bougainville.
Chapter 4:

DFAT aid in Bougainville’s development

1. Introduction

As outlined above Bougainville was initially colonized by the Germans as part of the colony of New Guinea. After WW1 Bougainville was governed by an Australian colonial administration under the Trusteeship of the League of Nations, as part of the Mandated Territory of New Guinea (Braithwaite et al. 2010).

Before WW11 Australia spent very little on the development of PNG (Gupta 1992). After World War II aid increased slowly. In 1946 the aid grant was $A 0.5 million (about PNGK 1M) and it was raised to $A 4.04 million (about PNGK 8.08M) in 1947. By the year 1967 the aid grant was $A84.3 million (about PNGK 168.6M) and rising rapidly, even after PNG’s independence. By 2005 aid had increased to about $A436 million (PNGK 872M). Currently, PNG is the largest bilateral DFAT aid recipient, receiving $A507.2 million (about PNGK 10,144M) in 2012 (Jennings & Claxton 2013).

In the 1920s the Australia colonial administration provided some development assistance specifically for Bougainville. Thus in 1927 the Australian colonial
government subsidized small schools run by the Catholic Marist Missionaries at Kieta in Central Bougainville. In 1929 the Australian colonial government assisted in establishing a SDA (Seventh Day Adventist) Church Agency school at Unipisa also near Kieta (Smith 1989). It also spent money in establishing an administration and supporting a mission-based basic primary health care service. By 1968 there were a total of 70 aid posts. Aid assistance also included aspects of technical and skilled human resources support, such as trained nurses, teachers, doctors and dentists. There was also aid assistance in transport infrastructure development including roads, bridges, airstrips and ports (jetties) (Price 1966).

Currently DFAT aid to Bougainville (among other donors including EU, UNDP, NZ Aid and JICA) has increased both during and after the 1990s conflict. It is difficult to determine the exact amount of DFAT aid donated to Bougainville between 1997 and 2014, the period this study takes into account. In 2014 DFAT aid to Bougainville was PNGK 75 million (about A$37.5M) and is expected to increase in coming years (Jennings & Claxton 2013). This aid has not been immune to challenges and controversies.

This study explores whether DFAT aid can make a better contribution towards Bougainville’s future economic development.
2. DFAT Aid Policy and legislation

In the area of aid and development there are policies (or/and legislation) that govern the procurement of aid resources, both for the donors and the recipient states. Donor policies basically determine the areas (social, economic or political) where aid is to be allocated, the type of aid (grants, HR or infrastructure projects) and the amount of aid. Normally the type of aid is determined by the development needs of the recipient state. Donor states also determine a model for delivery of aid resources (whether tied or untied - discussed above in chapter 2) to the recipient state. The recipient state’s aid policies serve as guidelines for managing aid. This involves identifying priority development areas for the allocation of aid resources. Aid policies in recipient states also includes managing implementation of aid-funded projects. This includes managing contracts, coordination, monitoring and evaluation of aid projects.

For the purposes of this study I will outline some illustrative examples of DFAT aid policies (or/and legislation) enacted by the Australian Commonwealth Government.

*Australian Government: DFAT Ministerial Statement: (By Hon Bob Carr: Foreign Affairs Minister, Commonwealth of Australia, 2013)*

The fundamental role of DFAT aid is ‘to help people overcome poverty’. This is implemented through five strategic roles that guide Australian aid programs. The first is saving lives, focused on improving public health by increasing access to safe water and sanitation. This also involves catering for poor women and children, through maternal and child health services, and supporting large scale disease prevention, through vaccination and treatment. The second role is promoting
opportunities by giving more children access to school and empowering women to participate in the economy, in leadership roles, in education and enhancing the lives of people with disabilities. DFAT’s third role is sustainable economic development, which involves improving food security, incomes, employment and enterprise opportunities. This also includes reducing the negative impacts of climate change and other environmental factors. Fourthly, DFAT supports effective governance. This role is focused on improving governance to deliver better services, to improve security, and to enhance justice and human rights. Finally DFAT has a humanitarian and disaster response role, which involves preparedness and responses to disasters and civil or humanitarian crises.

DFAT aid policy (under the Abbot government) emphasises an effective aid program for Australia: Making a real difference—delivering real results. A four-year (2012-16) budget allocates resources based on an assessment of four criteria: poverty, national interest, Australia’s capacity to make a difference, and the scale and effectiveness of current programs. Asia and the Pacific continue to be the highest priority regions, receiving around 75 per cent of DFAT aid. Australia’s largest bilateral aid recipients are PNG, Afghanistan, the Solomon Islands, Vietnam, the Philippines, Bangladesh, East Timor, Pakistan, Cambodia, Burma and Vanuatu.

More than 30 per cent of the aid budget is delivered through global partnerships, expanding the reach and influence of DFAT aid. The World Bank Group, the Asian Development Bank, the World Food Program and the UN Children’s Fund are the most significant multilateral partners in DFAT aid programs. About 25 per cent of the aid budget is spent on education, to get about 4 million more children into
school and to provide a better quality of education for another 20 million children. At least 10 per cent of the aid budget (increased from 6 %) is delivered through partnerships with NGOs (Commonwealth of Australia. Australian Aid Assistance for International Development 2013).

Below Figure 16 indicates the distribution of the DFAT aid budget for 2013/14 financial year.

Figure 16: Distribution of DFAT aid Budget 2013-14


There are also Australia-PNG bilateral policies that guide DFAT aid donated to PNG.

Below are some of these policies and/treaties.
**4.2.1 Australian Aid Policy Framework**

DFAT aid programs in PNG are implemented under the PNG–Australia Partnership for Development, an agreement signed in 2009. Furthermore, the Australia–PNG Ministerial Forum (2011), in response to the 2010 Australia-PNG Development Cooperation Treaty review, endorsed aid focused on sectoral development areas. The prioritised areas are: education, health (and HIV/AIDS), as well as transport infrastructure, with a focus on roads maintenance and law and justice (Papua New Guinea Annual Program Performance Report 2011 2012).

Other aid programs, including democratic and public sector governance, are focused on supporting the key service delivery areas identified above. The aid program is phasing out direct engagement in the rural development and agriculture sectors (which has some significance for my thesis, as we shall see below). Future DFAT assistance in these areas will be limited to the Australian Centre for International Agricultural Research’s program of support in PNG. Similar processes are used for DFAT aid to Bougainville. In addition, following a review of the GIF (Governance and Implementation Fund), the DFAT component of financial support, elaborated below) for Bougainville, this aid will be refocused to building public service capacity to meet current and future challenges posed by the inception of the autonomous government (Australian Commonwealth Government. AusAID 2012).
4.2.2 DFAT aid delivery mechanisms in PNG

DFAT uses the PNG government’s structures and systems to deliver the aid program to various sectors. Decisions on the use of recipient states’ administrative systems are dependent on comprehensive assessments, which determine whether a particular financial or procurement system can be used to effectively deliver aid while managing risks. The assessments also identify ways to further strengthen systems used to deliver aid programs. There is a range of checks and balances used to manage risks when using recipient government’s systems (Australian Government. DFAT 2013).

In 2011 various PNG government systems were partly used to deliver DFAT aid programs in PNG. For example, A$11.5 million (about PNGK 5.75M) was channelled through the Department of Education’s finance system to support school subsidies. Another PNGK85.5 million (about A$43M) was provided through the Department of Works procurement system for road maintenance contracts. In these cases PNG government departmental systems were used for managing, monitoring and evaluation of aid projects. Another policy that guides DFAT’s allocation and implementation of its aid resources is the PNG-Australia partnership Declaration signed in May 2013. This is a *Joint Declaration for a New Papua New Guinea-Australia Partnership* (2013) on issues related to socio-economic and political development (Australian Government. DFAT 2013).

The Joint Declaration for a new PNG-Australia Partnership was signed in May 2013 (by then Australian Prime Minister, Julia Gillard) and her PNG counterpart the Hon Peter O’Neil.
This declaration was aimed at acknowledging, strengthening, reaffirming and achieving social, economic and political development cooperation between the two countries. Among these aims are: strengthened bilateral cooperation and to tackle common challenges to national interests, upholding democratic values, good governance, gender equality, the rule of law and sustenance of the peace, stability and prosperity of the Asia-Pacific region.

This declaration also reaffirms the two countries’ growing economic links, as reflected in the *Australia-PNG Economic Cooperation Treaty*, in which support for free trade and rules-based investment processes to promote economic and social development were emphasised. This was aimed to support PNG’s efforts towards achieving the *Millennium Development Goals* (PNG’s development goals 2010 – 2020).

As members of the APEC (Asia-Pacific Economic Cooperation) and the WTO (World Trade Organisation), both PNG and Australia acknowledged the importance of removing impediments to trade, consistent with WTO rules, and commit to work together to advance their respective international trade agendas (Australian Government. DFAT 2013).

Below Figure shows the allocation of DFAT aid resources to different development areas.
From Figure 17 above, we see that most Australian aid is allocated to non-economic development areas. Only 16 per cent is directly allocated for sustainable economic development. However, 25 per cent is allocated to effective governance, an area that facilitates economic development (cf. above: chapter 2).

Bougainville receives a portion of the DFAT aid donated to PNG, given that it is still part of PNG (until such time as a referendum determines its political future). So DFAT aid policies in PNG apply also to Bougainville. In addition, the BPA contains provisions on how to deal with foreign aid.
3. DFAT aid to Bougainville: policy management and implementation

Part i of the BPA contains provisions on how the ABG deals with foreign aid as an autonomous government within PNG. The specific articles are:

172. The agreed arrangements for foreign relations will also apply to foreign aid consultation, and Bougainville representation on delegations.

173. The PNG National government will do its best to obtain foreign aid to support restoration and development in Bougainville, and to facilitate the ABG’s participation in managing aid projects.

174. The ABG will be able to obtain foreign aid.

175. The PNG National government will approve foreign aid secured by the ABG, which does not reduce the value of aid already available to PNG – and subject to overriding foreign policy considerations.

176. The ABG will keep the National government fully informed of its efforts to obtain foreign aid.

177. The PNG National government will co-operate with the ABG by negotiating such international agreements as may be required to finalise foreign aid prospects identified by the Autonomous Bougainville Government (Bougainville Peace Agreement 2001).

Various agencies from the ABG as well as DFAT officers are involved in the administration and management of aid resources. The ABG’s Division of Planning, Budgeting and Aid Coordination is responsible for coordination of all foreign aid. The two officers directly responsible, especially in implementation of aid projects, are the Aid coordinator and the Assistant aid coordinator.
However, some Bougainville officials argue that all donors (UN, NZ, JICA, EU, and DFAT programs) seem to manage their own aid resources (Interview respondent ABG official 4 on 27 August 2014). This interviewee, for example, made a special mention of the 15 bridges donated by JICA to Bougainville (from 2009-2012) as being totally independent from ABG’s project procurement and management processes. All contracts, even recruitment of casual labour, was done by JICA.

As alluded to above (chapter 1) the reason for selecting DFAT aid for this study is because it provides the largest amount of aid of all donors, even easily eclipsing the PNG government’s grants to Bougainville (apart from SIF: referred to above: chapter 1).

4.3.1 Current DFAT aid procurement processes in Bougainville

In managing Australian official aid DFAT officials are involved mostly at the project identification/formulation stages. Actual implementation is managed mostly by the ABG’s departments (and other aid recipient agencies when projects are funded outside of ABG) responsible for the aid-funded projects.

According to one senior official (Interview respondent DFAT official 1 on the 19 August 2014) DFAT aid resources are managed as two categories. One is managed directly by DFAT aid officials (although with some consultations with the ABG officials and leaders). The other is the GIF (briefly referred to above) which is intended to be the ABG’s administrative support grant. Of these two categories of aid the former is governed and managed predominantly by DFAT aid officials led by a manager resident in Buka, and in consultation with higher DFAT authorities in Port Moresby, if and when necessary.
The management of DFAT’s Bougainville aid resources relies on final decisions made by DFAT Country (PNG) Managers in Port Moresby (Interview respondent ABG officials 4 on 27 August 2014). The allocation of aid resources and the selection of projects are conducted in two ways: through submission of project proposals (further explained below), or as decided by DFAT aid officials (consistent with DFAT policy objectives: referred to above).

The GIF is governed by a joint committee comprised of ABG and DFAT officials. The chairperson is the Deputy Administrator–Policy of the ABG administration. According to DFAT officials (Interview respondent DFAT official 4 on 09 September 2014) the GIF funding is intended for social and economic development and to support the good governance programs of the ABG. Political development matters (for example preparations for the referendum) are not within the criteria for GIF funding.

GIF funding is accessible by submission of applications prepared in a PFD (Project Formulation Document). This follows a standardized template where details of the intended project are documented. This includes:

- How the project is identified or why it is needed;
- Identifying the beneficiaries of the intended project;
- Long-term and short-term goals and objectives of the project;
- Budget (cost) involved in establishing the project;
- Time-frame required to complete the project; and
- Identifying the risks involved and how these (risks) can be managed or prevented.
The completed PFD forms are submitted to the GIF office, where the committee (referred to above) convenes, meeting usually every 3 month for screening the submissions and to approve projects for implementation. The implementation of GIF-funded projects, particularly infrastructure projects, are managed by the ABG Technical Services Department. For other (social, governance and economic) development areas, the funding is released to the respective organization upon approval of the GIF Committee (Autonomous Bougainville Government. Governance Implementation Fund Office 2013).

The processes involved in accessing DFAT aid funding arguably could be improved. One ABG official (Interview Respondent ABG official 4 on 09 September 2014), noting that PFDs are only submitted within the funding criteria of the pre-budgeted areas, argued that submissions outside of the budgeted criteria are normally rejected, even for cases that may be required due to un-foreseen circumstances.

The GIF also has management policies that are intended to promote the transparency and accountability of financial expenditures. The two most important are the no cash advance policy and compulsory acquittals. The former refers to a situation where officials are not allowed to withdraw from government coffers an amount of cash to themselves make payments to service providers against the latter’s invoice. Instead payments are paid directly to service providers against their invoices. This policy was introduced in 2010 after a financial situation where there was more than PNGK 200,000 (about A$ 100,000) un-acquitted GIF monies spent by various ABG agencies.
Compulsory acquittals refer to the situation where all payments are acquitted by officers (users) with official receipts from service providers. In this case acquittals of previous monies serve as pre-requisites before future payment to the same government agency (or an officer) can be made (Autonomous Bougainville Government. Governance Implementation Fund Office 2013).

Anderson, Dayna and Isabella (2012), stated that international aid donors see policies as one of their most important tools for shaping aid and ensuring their aid’s effectiveness. Policies are the medium through which donors articulate the principles and priorities that provide the basis and rationale for what they do and how they do it. They set criteria for programming and funding decisions and procedures.

As briefly mentioned above, the implementation of GIF-funded infrastructural projects is managed by the ABG’s Technical Services Department. This includes, managing contracts (tendering and awarding) and the coordination, monitoring and evaluation of various stages of the project implementation.

Prior to the enactment of the Bougainville Tender and Contracts Management Act in March of 2014, the PNG’s Central Supplies and Tender provisions were used (established under Section 39 of the Public Finance Management Act 2003) to control and regulate procurements. Currently the ABG has its own laws that are used to manage contracts. Briefly contracts are dealt with at two levels: major and minor works, as determined by the value of each tender (Autonomous Bougainville Government. Technical Services Department 2013). Generally for any contract
works worth above PNKG 10 million (about A$5M) the BEC (Bougainville Executive Council), comprising the President as the chairperson and the ABG Cabinet (with advice from senior officers from key departments), makes the final decision. Any contracts below PNGK 10 million (about A$5M) are dealt with by a Tender Board chaired by the Chief Secretary and several other Secretaries from key Departments, including Planning, Finance, Technical Services, Law and Justice as well as representatives from donor agencies (especially in the case of donor-funded projects). The effectiveness and efficiency of these procurement processes can be assessed by analysing the strengths and weaknesses of the outcomes of aid-funded projects.

4.3.2 Exploring the strengths and weaknesses of DFAT aid

Strengths

The strengths of this procurement processes include: comprehensive documentation of the intended projects in the PFD (cf. above). This implies that the project is planned systematically (as opposed to selecting it on an ad-hoc basis) and addresses development issues. One important aspect is that the decision is done democratically, transparently and collectively by a committee (BEC or Tender Board), as opposed to a decision by a single individual.

Weaknesses

Some procurement process (used to manage both aid and government resources) have been manipulated by corrupt practices, which resulted in some projects not being successfully implemented (and/or not completed in the case of some infrastructure projects). There are some corrupt practices, even among leaders
(both bureaucrats and politicians), that undermine the procurement process - especially in major contract works (Interviews with respondent DFAT official 3 on 09 September 2014).

The above respondent claimed that examples of such corruption included the bribery of officers to secure information about the tender process, such as tipping off the client about the tender value to contractors, so the client was in a better position to tender successfully for the contract. This interviewee argued that there were even cases of the illegal award of contracts to friends or family members or relatives, for cash or in-kind benefits. This type of corruption was referred to as the 10 per cent syndrome, given that in most cases the bribe is 10 per cent of the total value of tender. The above interview respondent claimed that there were cases where some credible investors to Bougainville withdrew because of personal differences with some of the ABG leaders.

These types of corruption (above) were acknowledged by Keeley (2012), who stated that bid rigging is another aspect of corruption, where qualified and ethically-minded contractors may lose out to less scrupulous bidders, even if they offer to do the job more cheaply. Bhagwati (2005) also stated that corrupt practises are used by politicians and bureaucrats to squeeze out cheaper contractors because those who put in a higher bid earn more for doing the same job, and have additional funds for paying the official involved in manipulating the process of awarding the contract.

In the case of Bougainville (with both DFAT aid and government funding) corruption leads to contracts being awarded to companies that may lack the relevant expertise
and equipment, which results in unsatisfactory or even uncompleted projects. Keeley (2012) gave similar examples of corruption even involving outright fraud, where a company building an aid-funded road may save money by digging only shallow foundations, and then keep the savings for itself. Other scenarios, which involve the purchase of goods, may see a supplier deliver a used item as a new equipment (such as computers) and bribing officials to turn a blind eye.

In other cases in Bougainville shelf companies are registered to bid for tenders (Interview respondent DFAT official 4 on 09 September 2014). When the contract is awarded to them they access the funding for project and distribute it among those involved in that corrupt deal without actually implementing the project.

The above interviewee stated that in many cases such practices are done in conjunction with the procurement officers and even the bankers, who are included in the sharing of the misappropriated funds. The above interviewee further argued that there were also cases where contractors either sold DFAT aid-funded building materials or even use them to build their own private properties. Still others have used mobilization funds (initial establishment funds for contractors) to purchase things that are not scoped (listed) in the contract tender documents (quantity of bills).

Similar experiences as those in Bougainville were acknowledged by Keeley (2012), who claims that corruption can strike at almost any point in the chain of relationships between donor and recipient. One of the most obvious is through bribes. In many cases contractors may have to pay a bribe equivalent to between 5 per cent and 20 per cent of the value of the contract they are seeking, and between
2 per cent and/or 5 per cent of the value of any invoices they submit. In Bougainville’s case most of this corruption could be rooted in the Melanesian cultural values and practices referred to above in chapter 1.

4.3.3 Counter-arguments on the DFAT aid management system

There could be a counter-argument against the DFAT aid procurement process (especially that of GIF’s no cash advance and compulsory acquittals, as referred to above). It could be argued that DFAT’s complicated and over-rigid procurement process may be too inflexible to take into account unforeseen urgent issues that might arise. In this case it would cause unnecessary delays to development processes.

For example, ABG officials argued that there were times when meetings with the PNG government were advised on very short notice (mostly 1-2 days before the actual meeting dates). If there were un-acquitted monies from previous GIF-funded activities to the same agency the GIF regulations did not allow new funding to be released. So the meetings had to be rescheduled to a later date (Interviews respondent ABG official 3 on 20 August 2014).

The above interview respondent also claimed that there were other cases where funding was delayed, which resulted in continuous postponing of government programs while awaiting final approval for release of funding from higher DFAT aid authorities in Port Moresby. This could indicate that there are cases where aid policy, management procedures or even accountability requirements, seem to over-ride the prompt delivery of goods and services promoting development processes.
for the people of Bougainville, which are deemed to be the primary purposes of DFAT aid.

Anderson, Dayna and Isabella (2012) argued that the situation where aid donors take too much time, are not flexible, and require complicated accountability procedures produces a “tick-the-box” system. Such processes become counter-productive to development when implementing officers lose sight of the very values that these processes were intended to support. They also obscure contextual differences and limit adaptations to changing circumstances. Providers and recipients argued that rigid templates for planning and evaluation obstruct creativity and innovation, which leads to pre-packaged and irrelevant or unproductive delivery of aid projects.

This criticism indicated factors that have a bearing on aid-driven development issues. Among them is the level of aid coordination between DFAT (the donor) and the ABG (the recipient), particularly for infrastructure projects. Figure 18 below is based on ABG officials’ interview responses to how they perceived the level of coordination between the ABG and DFAT officials.

<table>
<thead>
<tr>
<th>Level of aid coordination</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No aid coordination policy or framework</td>
<td>88</td>
</tr>
<tr>
<td>Need to improve coordination</td>
<td>12</td>
</tr>
</tbody>
</table>

This coordination analysis here refers only to interactions between DFAT and ABG officials at the aid project identification/formulation stages. As noted above, coordination at the implementation stages is done by the ABG departments responsible for aid-funded projects.
Based on Figure 18, most (88%) of the ABG officials’ interviewed stated that there are no coordination mechanisms in place. Even the other 12 per cent argued that DFAT aid-funded projects needed improvement in coordination. That the donor (DFAT) has significant control over aid undermines the factors that make aid effective. (cf. above: chapter 2) and affects the outcomes of aid projects. A lack of effective coordination (in this case by the ABG’s departments when contractors implement aid projects) can create opportunities for those responsible to divert aid resources for their personal gain (Anderson, Dayna and Jean (2012).

Where there is misuse or theft of DFAT aid, this supports the DFAT interviewees’ recommendation (cf. Figure 6: chapter 3) that the ABG needs administrative process improvements to enable effective development. In particular the breach of accountability by ABG officials was noted by one DFAT officer, who stated that the management aspects of GIF (especially compulsory acquittals) are not observed (Interview respondent DFAT official 4 on 09 September 2014). For example, travel allowances paid to officers are not returned to GIF when the duty travel is cancelled for unforeseen reasons. Instead the monies are used for the purchase of personal goods and services. It is a weakness of GIF management that there are no penalties for officers that breach management policies.

As seen above aid management, both at policy and implementation levels, encounters problems related mostly to coordination and monitoring between the donor, recipient and the project implementers. The aid managed directly by DFAT has some aspects that are worth analysing to explore its limitations and how these can be rectified.
4. Aid projects directly managed by DFAT officials

As briefly referred to above, apart from the ABG’s bureaucratic process where the PFD form is used to identify priority development projects, there are other DFAT aid-funded projects that do not fall under this process but are mostly determined by DFAT authorities. In some cases DFAT ultimately has the final say on how, and/or where aid resources have to be used within its’ strategic framework (Makuwira 2006).

Anderson, Dayna and Isabella (2012) argued that where donors control aid resources those donors may impose pre-packaged programs and techniques developed in one context and implement these inappropriately into other local realities. It is advisable that, where such differences exist, international actors consult a range of local views. The current aid project cycles and procedures do not allocate attention, time, or resources for such consultations. Instead donors distribute aid resources on a schedule which is too urgent and undermines opportunities for them to understand local social and political dynamics.

In his survey conducted in Bougainville after the crisis, Gesch (2005) also discovered that in the view of Bougainvillean officials, foreign policy-driven development (including that via Asian and European aid agencies) may not be successful because donors have their own agenda. He argued that the Bougainvillean’s view of aid-driven development was that donors should provide funding to implement local initiatives. But donors wanted their development aid to be consistent with their organizational policies (which includes training, planning and coaching) to satisfy the accountability and transparency requirements in their respective organizational jurisdictions.
One donor agency official argued that allocation (and procurement) of DFAT aid resources is compromised between the pursuit of Australian national interests and Bougainville’s development priorities (Interview respondent 1 from other donors agencies on 12 September 2014). This situation could lead to mismatches, as development projects deemed as priority for the ABG may not be important for DFAT.

The above respondent further proposed that the rationale for projects influenced by DFAT aid officials is an issue that needs to be analysed. It could be argued that such projects or programs (that do not emerge from the ABG’s bureaucratic processes, such as the PFD) are selected because they are consistent with the Australian aid policy framework (both overall and for PNG).

DFAT aid projects or programs that are not the result of consultation with the Bougainville government include; when DFAT aid officials (or even the Australian government) decide unilaterally what is required for the development of Bougainville. These also include when processes involved in identifying these development areas are implemented without using the PFD. These instances raise issues about how effective or relevant such projects or programs are for Bougainville’s development processes.

4.4.1 Examples of DFAT direct aid-funded projects

One area of DFAT aid that did not emerge from the PFD process is the deployment of foreign advisors to key departments of the ABG’s administration. In 2014 there were 22 DFAT-funded advisors in the ABG. This advisor program creates some
sensitivity for many Bougainvilleans, who think that Australia is thereby pushing the re-commissioning of the Panguna mine.

For example, Lasslett (2013) pointed to DFAT recruiting two advisors, Anthony Reagan and Professor Ciaran O’Faircheallaigh, who were alleged to have strong links with Rio Tinto Australia (which formerly operated the disputed Panguna mine) did not help the peace process. They were accused of pursuing Rio Tinto’s interests in development of the Bougainville Mining Act, which was rejected on two occasions by warlords and stakeholders and was in fact never legislated (Papua New Guinea Mine Watch 2014). This can be seen as wastage of aid resources for un-productive activities. Bougainville’s Mining Laws were later developed by Adam Smith International, a private consultancy firm from UK, and passed in March 2015 ABG’s Parliament sitting (Laukai 2015).

There are other cases that reflect the ineffectiveness of DFAT-funded advisors not mentioned here. One ABG official argued that most of advice provided by the DFAT-funded advisers is not workable, given Bougainville’s complex cultural and post-conflict issues (Interview, respondent ABG official 2 on 20 August 2014).

Such instances were referred to by Anderson, Dayna and Isabella (2012) as cases where donors’ political interests shaped allocations of aid, both among and within countries. Aid policy determines who gets what and aid effectiveness sometimes might be a secondary priority to donor country political agendas. In other words, donors decide their policy priorities and pursue their agendas in recipient countries without necessarily negotiating ways that aid recipients can participate in or influence aid decisions.
Another factor affecting DFAT aid to Bougainville was referred to by Pip (1993), and Vikki (1999), who stated that DFAT aid assisted the PNGDF - at the cost of about $A 32 million (about PNGK 64M) per year - during the 1989-97 Bougainville crisis. Australian military aid included: Pacific Class patrol boats, speedboats, Iroquois helicopters and Nomad aircraft, which were used by the PNGDF in fighting with the BRAs.

It could be argued that DFAT’s military aid was for the purposes of maintaining the rule of law (democracy), given that the BRA (who were warring with the PNGDF) was an illegal army. Australia might also have been concerned about potential insurrectionary contagion spreading to other parts of PNG. Alternatively, critics such as Havini (1999), saw the military aid as aimed to assist Rio Tinto Zinc (or its subsidiary, BCL) to recapture and re-open the Panguna mine.

Those DFAT aid projects or programs funded outside of the ABG’s PFD process raise issues of ownership for the ABG as a recipient. (which is an aspect of the effective aid management principles referred to above in chapter 2). Below are Figures 19 and 20 that attempt to assess factors that determine the allocation of aid resources in Bougainville. Figure 19 is derived from 4 DFAT interview respondents, and Figure 20 is based on interviews with 13 ABG officials.

Figure 19: Aspects that shape allocation aid based on DFAT officials’ interviewees

<table>
<thead>
<tr>
<th>Aspects that determines where aid is allocated</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid is determined by Australian national aid policy</td>
<td>40</td>
</tr>
<tr>
<td>Aid is determined by Bougainville’s development needs</td>
<td>60</td>
</tr>
</tbody>
</table>
Figure 20: Level of aid ownership based ABG officials’ interview respondents

<table>
<thead>
<tr>
<th>Level of ownership over aid</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFAT controls aid</td>
<td>88</td>
</tr>
<tr>
<td>ABG has ownership over aid</td>
<td>12</td>
</tr>
</tbody>
</table>

Figure 19 shows that 40 per cent of DFAT officials interviewed agreed that aid policy and/or project delivery is determined by the need for consistency with Australian national aid policy, which implies some lack of ownership over aid by the ABG (the recipient). In Figure 20 we see most (88%) ABG officials interviewed agreeing that DFAT controls the management of aid. In this case this reflects an adverse effect whereby if/when aid complies with its donor’s national aid policy, the level of ownership by the ABG decreases. This can lead to ineffectiveness for the reasons referred to in chapter 2. The different opinions here may reflect different perspectives on what is “policy”. It is worth noting that DFAT’s control over aid implementation is important for domestic accountability purposes to avoid it being misused, as discussed above.

The judgement of DFAT interview respondents about the allocation of aid resources saw a ratio of 40:60 (cf. Figure 19). This could indicate that there is a compromise between DFAT officers’ domestic accountability for aid implementation and Bougainville’s development needs, a compromise that advantages the needs. The latter (60%) tally possibly reflects some bias towards Bougainvillean needs and enhances aid and development (it creates a Good Policy Environment, as discussed in chapter 2).
Arguments about DFAT aid can be quite controversial as to whose interests are best served by DFAT aid to Bougainville. The fundamental role of DFAT aid is to help people overcome poverty. The experiences and cases discussed above show DFAT aid being used on areas that directly or indirectly overcome poverty. DFAT aid-funded-projects in Bougainville have diverse outcomes, being effective and/or ineffective depending on the particular circumstances.

5. Outcomes of DFAT aid-funded projects on Bougainville

The outcomes of DFAT aid-funded projects in Bougainville reflect most of what is contained in the current literature related to aid and development. Among these are the aspects of monitoring and evaluation, which are key elements used to assess whether the intended goals and objectives of a particular project are achieved. In this regard Keeley (2012) provides useful insights on how success or failure can be measured. Although the terminology of monitoring and evaluation can vary, aid evaluation is generally based around five criteria:

1. **Relevance**: does the aid activity suit the priorities and needs of the people it is supposed to be helping? This also asks if the objectives of a program remain sustainably valid and how well the actual outcome of a program matches up with the intended impact.

2. **Effectiveness**: this refers to what extent the objectives have been met. If they haven’t been fully met, why not?

3. **Efficiency**: this is a measure of how much was spent in terms of time and resources compared to what was achieved.
4. **Impact**: this is a measure of what has changed, both for good and bad, as a result of aid intervention. Judging the scale of a program’s impact can be difficult for non-physical aid programs like ‘good governance’.

5. **Sustainability**: which is a measure of whether the benefits of an intervention continue even after donor funding ends.

These assessment and/or evaluation mechanisms are useful tools to map out the effectiveness or ineffectiveness of aid-funded projects. Anderson, Dayna and Isabella (2012), also developed a dual paradigms approach for assessment and evaluation of effectiveness of aid-driven development processes, as shown in Figure 21 below:

**Figure 21: The two paradigm approach**

<table>
<thead>
<tr>
<th>Externally driven aid delivery system</th>
<th>Collaborative aid system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local people seen as beneficiaries and aid recipients</td>
<td>Local people seen as colleagues and drivers of their own development</td>
</tr>
<tr>
<td>Focused on identifying needs</td>
<td>Focused on supporting/reinforcing capacities and identifying local priorities</td>
</tr>
<tr>
<td>Pre-planned/pre-determined programs</td>
<td>Context-related programs developed jointly by recipient communities and aid providers</td>
</tr>
<tr>
<td>Provider driven decision making</td>
<td>Collaborative decision-making</td>
</tr>
<tr>
<td>Focus on spending on a predetermined schedule</td>
<td>Fit money and timing to strategy and realities on the ground</td>
</tr>
<tr>
<td>Staff evaluated and rewarded for managing projects on time and on budget</td>
<td>Staff evaluated and rewarded for quality of relationships and results that recipients say make lasting positive change in their lives</td>
</tr>
<tr>
<td>Monitoring and evaluation by providers on project spending and delivery of planned assistance</td>
<td>Monitoring, evaluation, and follow-up providers and recipients on the results and long-term effects of assistance.</td>
</tr>
<tr>
<td>Focus on growth</td>
<td>Planned draw down and mutually agreed exit/end of assistance strategy.</td>
</tr>
</tbody>
</table>

Source: Anderson, Dyna and Jean (2012)
For a proper evaluation of DFAT aid to Bougainville it would be necessary to investigate the reasons for and causes of both effectiveness and ineffectiveness. Such an analysis would throw some light on developing a new model for Bougainville’s aid-driven economic development in the future. However, due to the unavailability of aid records and the expected specified outcomes of this aid (which could form the basis for monitoring and evaluation), it is difficult to conduct an evaluation of DFAT aid to Bougainville. Instead some examples of effective and also ineffective aid projects will be discussed, to highlight the factors that affected past aid and could affect its future role in the development of Bougainville.

As briefly mentioned above, Australia funded various types of projects as early as the 1920s and throughout the colonial period. Australian aid greatly increased during, the 1989-97 crisis period and also the post-conflict restoration development period. This investigation will be limited to some DFAT aid-funded projects during the post-conflict period.

4.5.1 Effective DFAT aid-funded projects

Among the most effective DFAT aid-funded projects are the establishment of the Buka general hospital, the upgrading of Buka airport as well as some schools (including Tarlena Secondary school and specialised training centre and the Nissan high school). The exact number of projects and amounts expended is difficult to ascertain, due to the unavailability of records. Establishment of the Buka general hospital from 2000-01 was crucial to improve the health of the citizens. This project has aspects of social development by improving health outcomes. Indirectly it has contributed to economic development by maintaining a healthier work force than
would exist in its absence and so improving labour productivity. For the people of Bougainville this project reduced the cost of necessarily seeking medical services in other provinces of PNG, which was the case prior to its establishment.

The upgrading of the Buka airport is another aid success story, given that it facilitates the movement of people and goods and makes services more efficient. This promotes economic and social development. Like-wise the upgrading of schools was positive for economic development by improving human resources and labour productivity and – in the long term- reducing Bougainville’s dependence upon the outside provision of skilled labour. This will have a positive effect on the post-independence balance of payments situation.

Among many other successful aid-funded projects, these examples are consistent with a major tenet of effective aid management principles: aid should be invested to enhance the factors that will facilitate development in the recipient states (cf. chapter 2).

4.5.2 Ineffective DFAT aid-funded projects in various circumstances

There are four partly successful DFAT aid-funded projects, the BCTRRP (Bougainville Coastal Trunk Road Rehabilitation Project) implemented from 1999-2002 at the cost A $13.2 million (about PNGK 26.4M) and BCTRMP (Bougainville Coastal Trunk Road Maintenance Project from 2002-2007, which was worth A$24.2 million (about PNGK 48.4M). The other two are the BWRP (Bougainville Wharves Rehabilitation Project) implemented from 2002-2004 at the cost of A$14.0 million (about PNGK 28M) and BCCDRP (Bougainville Cocoa and Copra Dryer Rehabilitation Project) from 2001-
2005, which cost A$7.7 million (about PNGK15.4M). These projects actually had partly favourable outcomes, as reflected in the impact assessment conducted by Scales, Craemer and Thappa (2008).

The Scales et al assessment investigated whether the effects of DFAT’s assistance on roads, wharves and agriculture projects assisted economic growth and simultaneously contributed to peace-building. It further evaluated the cost efficiency of this assistance and whether this could have been delivered more effectively. The findings reflected that DFAT’s support for transport infrastructure and agriculture had stimulated economic growth, which indirectly enabled other developments including peace-building and more gender equality in various districts. In 2006, the returns on the aid investment on cocoa was about K59.44 million for in the districts of, Buka, Selau/Suir, Tinputz and Wakunai.

The BCCDRP enabled efficient processing of cocoa in smallholdings that were rehabilitated under a seedlings project. That cocoa production increased to about 14 000 tonnes in 2006, which is about level with average pre-1989-97 crisis production, can be attributed to this DFAT aid, as this production recovery occurred twelve years earlier than anticipated. Furthermore the trunk road rehabilitation provided through the BCTRMP and BCTRPP in the northern regions has assisted smallholder cocoa producers to transport their produce to the markets. The areas where smallholder incomes have risen through improved agriculture and transport infrastructure are now largely peaceful (Scales, Craemer & Thappa 2008), which can be considered partly a by-product of DFAT aid.
The people from the remote areas of Kunua district who have received assistance with rehabilitation of cacao nurseries and dryers also benefited from the facilitation of economic development. Trunk road maintenance further boosted their economic well-being. The road provides the primary means of transport for the people and to freight export crops to market. On the other hand the restoration of economic activity in the central and southern districts of Arawa, Buin, Siwai and Bana has not been very successful. The outcome here was poor cocoa outputs with current yields even lower than during the pre-crisis times. The cause for these poor results is attributed by the Scale, Cramer and Thappa (2008) report to rainfall pattern changes.

The Scale et al (2008) report reveals that the four DFAT aid-funded projects – the Trunk Roads Rehabilitation (BCTRPP,) Truck Roads Maintenance (BCTRMP), Buka Wharf (BWRP), and Cocoa Rehabilitation (BCCDRP) were aimed at increasing economic development. The Cocoa Rehabilitation project is direct economic development assistance, while the Road Rehabilitation and Maintenance and Wharf Rehabilitation indirectly facilitated economic development. The report further states that these projects (including Buka wharf) have benefited the stake-holders. In fact, these projects are a model of the type of projects (economic development-oriented) that are intended to be explored in this study. However, these projects are development focused within local areas. The motive of this study is a step forward to focus on value-adding the products of locals, so these can be exported to international markets.

On the other hand some DFAT projects - Kangu wharf and shed (in Buin district) and Panakei shed, (in Siwai district) all in south Bougainville – have not proven effective.
The Kangu wharf was used only on few occasions after its completion in 2004. From 2006 - 2011 it completely ceased operations due to law and order issues. Currently this wharf is again occasionally operational since after the establishment of a Bougainville Border Authority post in Buin district in 2013 (Interview respondent, ABG official 2 on 20 August 2014). The two sheds (in Buin and Siwai districts) were never used for their intended purposes of cocoa and commodity bulk storage prior to export.

**Rationale of Kangu wharf, shed and Panakei shed**

The Kangu wharf project was intended to facilitate sea transport of imports and exports within south Bougainville. This rationale was derived from an understanding advocated by Bougainville leaders that local communities (even the former-combatants from the BRA) were to return to their villages and regenerate the agricultural industry of south Bougainville (Scales, Craemer & Thappa 2008).

Prior to the establishment of the wharf and the storage shed, the Cocoa Rehabilitation Project (BCCDRP, referred to above) provided services to re-generate cocoa and copra production, because it was anticipated that agriculture would be beneficial to revenue generation throughout Bougainville. This Cocoa Rehabilitation project anticipated agricultural revival; so it concentrated on infrastructure to facilitate processing, storage and transport for the cash crop producers. The wharf was built in anticipation of that revival of agricultural production and therefore of exports.

The three projects were established to facilitate storage, and to enable transport access to external markets (especially in PNG) for crops produced in south
Bougainville. This rationale was derived from previous (prior to the crisis) experiences, where south Bougainville had the potential to produce large quantities of these crops but lacked any effective means to access markets. The two storage sheds were aimed to allow the accumulation and storage of produce until the next export vessel arrived at Kangu Beach (Froyland, Miller & Urquhart 2003).

**Analysis of perceived beneficiary districts from the Kangu wharf, shed and Panakei shed**

South Bougainville consists of four districts; Buin, Siwai, Bana and Torokina. For various reasons the intended beneficiaries from two of the districts, Torokina and Bana, did not have easy access to these produce storage and export facilities (Interview respondent, ABG official 1 on 19 August 2014). Torokina had no road linkage to the projects’ sites. Torokinas use sea transport to access goods and services from Buka. It was also difficult for the Bana district people to access these new facilities due to poor road conditions, especially during the wet season (Interview respondent, farmer 7 on 12 September 2014).

The people of Bana access goods and services from Arawa. Access to Kangu wharf could be difficult for both Bana and Siwai people during the wet season, due to their inability to cross flooded rivers in the absence of bridges. Effectively, farmers from Torokina, Bana and Siwai could not easily access the Kangu wharf, while those from Torokina and Bana could not easily access Panakei and Kangu storage sheds during wet seasons, especially important given that in most cases cocoa pulse/harvest falls during the May – August wet season.

The causes for the ineffectiveness of these three projects could be a lack of effective aid management principles (referred to in chapter 2), particularly in areas
of good policy, coordination and ownership by the intended users. The fact that the
two produce storage sheds were never used at all could have reflected a mismatch
between donor priorities and recipient objectives (discussed above by Anderson,
Dyna and Jean, 2012).
Alternatively the aid projects anticipated a renewal of cocoa and copra production –
which the local Bougainvilleans supported – and provided facilities without
appreciating the considerable barriers to the locals’ access to this infrastructure.
This planning failure represented a lack of local knowledge of the roads and
transport system. Or the failure to communicate these local problems to the ABG or
DFAT.
In south Bougainville there are a total of seven DFAT aid-funded projects that were
never completed and are now abandoned (Interview respondent, ABG official 4 on
27 August 2014). The above interviewee argued that contractors did not complete
these DFAT aid-funded project (examples include a four-in-one classroom in Tstotivi
primary school in Torokina district) because of insufficient funds caused by
inadequate scoping that failed to allow for the high cost of transport (shipping and
by road) of materials. In fact by June 2012 there were a total of about 110
incomplete DFAT aid-funded infrastructural projects throughout Bougainville
Recently an improvement in the scoping and procurement cost planning, as well as
the inclusion of supervision of projects, has begun to reverse that trend. By
November 2013 the number of incomplete DFAT aid projects had decreased to
about 58 projects (Autonomous Bougainville Government. Technical Services
Department 2013).
The detailed records of DFAT aid funding on Bougainville’s road works within the restoration period are not available. However, the estimated total length of Bougainville’s roads systems is 1,163.03 kilometres. About 1,582.3 kilometres are main roads and 419 kilometres feeder roads. The DFAT aid allocations for upgrading of roads as of the year 2012 is A$ 10 million (about PNGK 20M) per year, being counter-funding to ABG contributions. By the year 2014 (when I did my fieldwork) about 108.60 kilometres had been sealed and 521.8 kilometres of feeder roads have been rehabilitated (Autonomous Bougainville Government. Technical Services Department 2013).

Figure 22: Example of the conditions of some feeder roads in Siwai district,

Photo courtesy of Donald Komoiki, Bougainville Forum of Facebook website, 2014
According to Ferguson (2006), by the end of 2003, DFAT allocated about A$16.5 million (about PNGK32.4M) on infrastructure, out of the total of over A$100 million (about PNGK200M) of aid committed towards Bougainville’s restoration. There are other DFAT aid-funded infrastructure developments, including rebuilding education and health facilities and maintaining bridges, wharfs and airports in Bougainville, that are not considered here.

**Good Governance: Drawdown of Powers and Functions**

A set of major projects in the area of good governance are the development of Bougainville’s laws and the drawdown of powers and functions from the PNG national government to the ABG (referred to above in chapter 1). The initial records of DFAT aid funding on the drawdown of powers and functions are not available because of a change of administration officers in the GIF Office. The records available are from 2010, with the inception of the current administration. In 2010, PNGK300,000 (about A$ 150,000) was allocated. In 2011 the DFAT aid contribution to governance improvement was PNGK600,000 (about A$ 300,000). In 2013 PNGK2 million (about A$ 1M) was committed to this sector (Autonomous Bougainville Government. Governance Implementation Fund Office 2013).

Despite the commitment of these monies, the drawdown of powers has not progressed well. So far about nine MoUs have been signed, although only Public Service powers and functions have been drawn down since the first request for transfer of such powers in June 2006 (cf. chapter.1)
Weapons disposal and Peace-Building

Another program to which DFAT aid resources are committed is the continuous peace building and weapons disposal process. According to Jennings and Claxton (2013), Hegarty and Regan (2006), Kenny (2002) and Braithwaite et al. (2010), this program began in May of 1997 with a grant of A$109 million (about PNGK218M) grant worth PMG (discussed above in chapter 1).

Apart from the Peace Monitoring Group, peace building is also conducted in specific communities that were severely affected by crisis-related issues. The peace building in specific areas has not progressed well, despite DFAT having allocated a significant amount of aid especially in the form of funding (Ferguson 2006). For example; in 2013 DFAT through the SPSN (Strongim Pipol Strongim Nasen), a localised implementation agency, committed A$93,063.50 (about PNGK 186,127.38) for reconciliation ceremonies among the Panguna mine site landowners. Generally the peace building and weapons disposal effort has not succeeded. The number of weapons is increasing; now there are more than existed during the height of the crisis (Autonomous Bougainville Government.Veterans Division 2013). Attempts to collect accurate data or assessments and evaluations on the weapons disposal programs were unsuccessful. There is lack of credible data on issues related to aid-funded peace building and weapons disposal programs (Interview respondent, ABG officials 6 on 28 August 2014).

The above interviewee proposed various factors that undermine the peace building and weapons disposal programs in Bougainville. Among them are armed factional
groups (e.g. the Mekamui and U-Vistract groups, discussed above chapter 1). The
above respondent further argued that another factor that hinders peace-building
and weapons disposal is the illegal weapons trafficking through the Solomon
Islands. This trade is fuelled by the close cultural ties between Solomon Islanders
and Bougainvilleans (discussed above: chapter 1) and also by the selling of
equipment and machinery abandoned by BCL at Panguna mine to purchase guns
and other weapons through illegal channels in the Solomon Islands.

The other factor that undermines weapons disposal and peace-building is the
recovery and reconditioning of WWII weapons and ordinance at Torokina, on the
southern tip of Bougainville. This area was the main source of bullets during the
crisis period. As referred to above (chapter 3), the Australian government - in
consultation with the ABG - has engaged Australian Defence Force personal to
recover and dispose some of these weapons under a program referred to as
‘Render Safe Operation’ (Australian Commonwealth Government. Defence
Department 2014).

The issues of peace building and weapons disposal are controversial. Internationally
many peace-keeping interventions have been conducted, especially by the UN, and
significant resources (especially funding) have been committed to address these
issues. In Bougainville the ADF-led peace-keepers have achieved a reduction in
hostilities to a few small areas, but little disarmament. Many guns and weapons are
still illegally possessed. However, as Scales, Craemer and Thappa (2008) noted,
DFAT aid- funded economic development activities have collaterally contributed to
civil order and peace building.
There are other DFAT aid-funded programs that are not mentioned here, given the difficulty of accessing official records of these projects. However, the above discussion highlighted factors that bear upon aid and development in Bougainville. There were cases where aid projects were successful (by serving their intended purposes) and there were others where aid projects were partly unsuccessful through planning deficiencies or insufficient local knowledge.

I examined the case of Kangu wharf and storage sheds to illustrate why aid is not fully effective in some circumstance. The cause I proposed here was a lack of utilization of effective aid management principles. On the other hand, such difficulties faced by a development aid project could be a result of lack of some capabilities within the ABG. This was alluded to by DFAT interviewees (cf. Figure 6: chapter 3). We cannot know if ABG officials told DFAT that the Kanga wharf project would not succeed until the local road infrastructure was augmented.

The analysis also reflected that quite a number of DFAT aid projects or programs are not progressing well, which could indicate a wastage of resources. This conclusion creates a basis to argue for some realignment of aid policy and procurements, into areas where aid can make a better immediate impact on Bougainville’s future development.

6. Mapping out the future of DFAT aid in Bougainville’s development

In road mapping an aid model for stimulating Bougainville’s future development there is need for an analysis of the development priorities of DFAT aid policy (as the donor) and the ABG (as the recipient). This is required to assess whether the donor
priorities match with the recipient’s objectives. Any mismatch between these variables will create a situation where a recommendation for realignment can be made for either donor policy or recipient objectives.

However, in the case where the recipient makes aid-driven realignments to its objectives there may be a tendency that such adjustments would decrease the local level of ownership of development programs, overriding one key aspect of effective aid management principles (cf. chapter 2).

The analysis of donor policies and recipient objectives, basically involves assessment of documented DFAT aid policy, contained within the policy frame work/ministerial statements, versus Bougainville’s development aid policies as articulated in the BPA. As mentioned above, the fundamental role of DFAT aid is to help people overcome poverty. This role is implemented by way of allocation of aid resources to five development areas (saving life, promoting opportunities for all, sustainable economic development, efficient governance, and humanitarian and disaster response). DFAT aid to PNG is also divided into these five categories (with one additional area: General development).

In assessing the ABG’s development objectives most of the official documents (cf. chapter 3) contain provisions on promoting economic development. Economic development was specifically emphasised as a priority previously in the ABG’s Corporate Plan 2009-2011 part e (Autonomous Bougainville Government. Corporate plan 2008). It was also referred to in the ABG’s Strategic Action Plan 2006-2010 article 2 (Autonomous Bougainville Government 2006). Currently economic

4.6.1 Proposing a future DFAT aid model for Bougainville

This thesis is aimed to explore how DFAT aid can be used to better achieve Bougainville’s development in the future. The production of this road-map will take into account effective aid management principles and aid models (as outlined in chapter 2). This thesis will be focused on addressing the factors that determine the effectiveness of aid. This will also take into account the recommendations from the ABG and DFAT interview respondents, who are the key informants for this study.

Addressing current aid and development problems

Previous analysis indicated that the problems that affect aid and development in Bougainville are centred on the non-utilization of effective aid management principles. There is also a lack of managerial capacity in various sectors of the ABG (as claimed by the DFAT interviewees: referred to in Figure 6).

Addressing these issues would include: improving coordination between the ABG and DFAT (referred to in Figure 19 above) and/or the ABG taking ownership of aid (referred to in Figure 20 above). Additionally, the ABG needs to improve its managerial capacity (referred to in Figure 6). This study proposes that one key reform is to prioritise allocating aid resources primarily to revenue-generating
According to the ABG interview respondents, currently almost half of DFAT aid is allocated to non-revenue generating areas, as shown below in Figure 23.

Figure 23: Areas where aid is currently allocated

![Area Allocation Pie Chart]

Figure 23 shows that the largest proportion (34%) of interviewees stated that aid is allocated to infrastructure development. As discussed and seen in the study by Scales, Craemer and Thappa (2008), this sector, especially transport infrastructure, facilitates economic development. The second largest (17%) proportion of aid is allocated to economic development, which is consistent with the rationale of this study. The other areas (on Figure 23) are non-economic sectors but may indirectly facilitate economic development.

Good governance and peace building are very necessary to create a suitable (predictable and just) civil society environment for economic development. Service delivery sectors (like education and health) also contribute to boosting economic
development, respectively by providing skilled labour and indirectly by enhancing labour productivity. Below are Figures 24 and 25, indicating areas where DFAT and ABG officials’ interviewees recommend that future DFAT aid should be allocated.

Figure 24: Areas recommended by ABG officials for future DFAT aid
Based on Figures 24 and 25 above, both DFAT (by 50%) and ABG (by 41%) officials argued that future aid allocations should be directed to the economic development sector. The officials of both organizations also agreed in other areas for aid allocation, including; infrastructure, HR capacity building, and agriculture, although the percentage frequency of respondents varies. These are basically some of the development areas that facilitate investment or economic development. So, there is some mutual consistency on where aid is supposed to be allocated by the two key institutional parties to aid and development in Bougainville.
4.6.2 Observations

Based on my experiences as an ABG official and my knowledge of specific projects (both programs like peace building, development of policies and legislation, and physical projects such as infrastructure, and transport systems) DFAT aid is both sometimes effective and sometimes ineffective, depending on the circumstances.

The reasons for aid ineffectiveness in some circumstances could include corruption, which results in misuse of aid resources. Based on the data analysis from the ABG interviewees there is also an adverse effect when DFAT aid complies exclusively with Australian foreign aid policy. In such cases the ABG’s ownership of aid objectives and the level of coordination with DFAT, particularly at project identification/formulation stages, decreases and results in an abrogation of effective aid management principles. There are also cases of non-alignment between donor priorities and recipient objectives.

Based on document analysis and interviews, there is usually consistency (match) between DFAT aid priorities and ABG objectives; that is both wish to pursue economic development in the future. To effectively implement this goal, there is a need to put in place good policy where the ABG will take ownership of development programs. This will also avoid any misalignment between DFAT priorities and ABG objectives. In addition there is a need for effective coordination, which will minimise corruption which results in misuse of aid resources.
7. Summary

DFAT (Australian) aid and development issues in Bougainville have a colonial history since the 1920s, from when Australia governed Bougainville as part of the Territory of Papua and New Guinea. Initially the amount of Australian aid to Bougainville was small. The quantity of aid increased in the 1960s, with the development of the Panguna mine and subsequently during and after the Bougainville crisis (1988-1997). This aid is expected to further increase in the future.

The outcome of DFAT aid has diverse results; aid has been effective or less so depending upon different circumstances. Aid ineffectiveness refers to some aid projects not being, or not able to be, used for their intended purposes. Lack of adaption and utilization of effective aid management principles is the main cause of aid ineffectiveness. These problems include the lack of ownership of the process by the ABG, which leads to mismatch between DFAT priorities and ABG objectives. There is also some lack of aid coordination between the ABG and DFAT at the project identification/formulation stage and at the implementation stage, particularly between ABG officials and contractors. This failure in the latter case sometimes leads to corruption, when some ABG officers or contractors take advantage of the situation and misuse aid monies for their personal gain.

In mapping out Bougainville’s future aid-driven development model there is considerable agreement between the ABG and DFAT, both in official documents and during interviews with their respective officials. They consistently indicated that priority should be given to the economic sector. This unanimity sets the basis to conduct a case study of the cocoa industry, to map out how DFAT aid resources can be used to boost Bougainville’s economic development.
Case Study: Improving Bougainville’s cocoa industry with DFAT aid

1. Introduction

The objective of this case study is to demonstrate how and where DFAT aid can be utilized in Bougainville’s future economic development. The approach is to employ effective management principles, and an appropriate aid model (cf. chapter 2) and use them to develop Bougainville’s cocoa industry. To identify where and how aid will be used, a road-map of the stages involved in cocoa production - from soil study to the export of dry beans - has been developed. In these stages problematic areas have been identified and analysed to determine the specific areas for which aid can be used to address these problems. The decision to use the cocoa industry for this case study was reached after assessing and taking into account a set of decision criteria as follows:

Consistency with Bougainville government development and DFAT aid policies

The proposed economic development area is consistent with the ABG’s development priorities and DFAT’s aid policy. The ABG has a 10 year cocoa development plan (introduced in chapter 3), where cocoa farms were proposed to
be developed in three categories, one hectare, four hectares and 10 hectares. One hectare farms are intended for family units, four hectares for mini-plantations, owned either by individuals or groups and 10 hectare plantations were for company operations (Autonomous Bougainville Government. Commerce Department 2014). This is consistent with DFAT’s development policy for Bougainville. DFAT officials (Interview respondents, DFAT official 1 on 05 September 2014 and DFAT official 4 on 09 September 2014) argued that by 2015 DFAT aid will focus upon facilitating agriculture-based economic development.

*Production capacity and any constraints upon the ability to produce sufficient product for the local market and export.*

About 70 per cent of Bougainville’s population live in areas where cocoa is being/has been grown. The only people not involved are the 4-5 thousand people of the Atolls, who are unable to cultivate cocoa due to land scarcity. Cocoa farming is also rare in the remote and mountainous isolated areas, especially parts of Torokina, Kieta and Panguna districts. This is mainly due to unsuitable climatic conditions (it is too cool) and difficulties in transport accessibility (Autonomous Bougainville Government. Commerce Department 2014).

*Demand and market indicators for consumption and export*

The cocoa industry has established markets both at the local level and for export. There are about seven export companies established in Bougainville. The main ones are AG Mark Pacific Limited and Monpi Cocoa Export, which operate in Buka and Arawa. The others are: Kieta Commodities, Autonomous Bougainville Commodities, STI Trading, Sankamp Holdings and KIAATA Copy Serve Ltd. Most of these operate in Arawa. Currently there is no direct export out of Bougainville, for various reasons.
outlined below. These companies are transhipping to export out of international ports in PNG (Papua New Guinea, Cocoa Board 2014). There are various government agencies and donors involved in activities related to cocoa: in farming, processing and even marketing or exporting (elaborated below).

Competitiveness in the national and regional (Pacific) markets

The demand for cocoa and competition in the international market is always there, regardless of whether the price is high or low. In fact there is never a situation where there will not be a market at all for cocoa in local, national and in international markets. However, the producer price may change from time to time, depending ultimately on the international demand and international trade systems.

Currently Bougainville’s dried cocoa beans are exported to Singapore, Malaysia, Indonesia and China. There is also a proposal for New Zealand’s Wellington Chocolate Company to purchase Bougainville’s dried cocoa (Autonomous Bougainville Government, Commerce Department 2014).

The extent of development of the supply chain from production to export

As I have shown, cocoa farming extends across most of Bougainville. After harvesting and processing the cocoa pods, the dried beans are then sold to the overseas exporters. The exporters sell their cocoa to overseas markets, to the manufacturers of products like chocolate. There are PNG government statutory agencies that are involved in the facilitation and regulation of cocoa farming, processing and marketing (exporting).

In this study I will begin by providing a brief historical background and describe the challenges for cocoa farming in Bougainville.
2. Background of cocoa farming in Bougainville

Cocoa originated in the Amazon, as early as about 1100 BC and was distributed to other countries over a long period of time. Today cocoa is farmed in many developing countries across Africa, Latin America, Asia and the Pacific regions (Neilson 2010). More than 90 per cent of all cocoa produced globally is grown by smallholder farmers, who cultivate only a few hectares and generally rely on family labour. Cocoa farming is ideally suited to hot, humid environments and is grown right across the equatorial tropics. The West African states of Côte d’Ivoire, Ghana and Nigeria, along with Indonesia, are currently the largest cocoa producers.

In many countries cocoa is the main cash crop through which people earn their living. Today there are about five to six million farmers in the tropics who earn their living from cocoa farming (Schmitz & Howard-Yana 2012). In some of these countries – eg. Cote d’Ivoire and Ghana - it is very important to the national economy and especially the balance of payments. In the Ivory Coast, which produces almost 40 per cent of the world’s cocoa production, it accounts for 15 per cent of its GDP and employs five per cent of households. Cocoa accounts for 60 per cent of the total value of exports in Ghana, and a large portion of the population depend on cocoa for their income (Boadu 1992). Adeoti and Olayiwola (2009) further stated that in the Nigerian economy, agriculture (of which cocoa is a major crop) contributes about one third of nation’s GDP.

There are various factors that affect the cocoa industry and which reduce the volume of production and its profitability. Some are ecological and climatic; these
include exposure to excessive sunlight, lack of soil nutrients and cocoa diseases caused by pests or insects (Roxanne 2001).

Other problems that affect quality are the poor management capacity of the famers, usually revealed during processing of the cocoa beans and which may lead to spoilage or poor bean quality. Adeoti and Olayiwola (2009) show how Nigeria is struggling to implement innovations in the processing of cocoa for export to maximise benefits to the farmers and the national economy. Similar problems are encountered by most countries that farm cocoa, including those in the Asia – Pacific.

5.2.1 Cocoa farming and viability in Bougainville

Cocoa farming was introduced to Bougainville in the early 1900s by the European colonizers. By 1914 there was nearly 30,000 hectares of cocoa and coconut (copra is product of the flesh of the coconut) plantations developed by the colonisers and their trading companies (Oliver 1991 and Braithwaite et al. 2010).

Cocoa farming is appropriate for the Bougainvilleans for very practical reasons. Among these are supply-side factors. From a socio-cultural perspective, most of the land (about 97 per cent) is owned by the people. This means that the land tenure system is customary freehold, inherited through some customary means (cf. chapter 1). Because the land is not alienated it is available for local farmers to develop cocoa farms.

Secondly, cocoa farming has less impact on the environment than other industries (especially mining). The clearing of the natural cover for the establishment of cocoa farms leads to de-afforestation, with some effect on the natural eco-systems.
However, this is partly redressed when the cocoa trees have matured. Furthermore the cocoa farm can easily be removed if the farmer decides to use that piece of land for other purposes.

Thirdly, from a management point of view, cocoa is an industry that can be managed easily with relatively basic skills, technology and tools. For example, weed control and even pruning (referred to below) can be done by using a simple bush-knife to cut the weeds (grass) and also branches, in the case of pruning. The establishment of a small-scale cocoa farm does not need much capital. The size of the farm is determined by the farmers themselves, depending on the availability of land and the farmer and the family’s capacity (funding and skills) to develop the farm. Also there are very low fixed costs as the farmers already have the implements and the land; all that is needed is the seedlings.

Fourthly, according to the UN’s Food and Agriculture Organisation, cocoa has good medium term market prospects. It appears that there will be an international shortage of cocoa over the next five to ten years as rising living standards internationally increase absolute demand for what is a discretionary consumption commodity. It is predicted that by 2020 demand for cocoa will increase by 30 per cent (Goodyear 2015). Given these factors cocoa can be profitably farmed in many parts of Bougainville.

Cocoa farming in Bougainville rapidly gained momentum during the Australian colonial administration, especially following the late 1960s. The assistance by the Australian colonial government included training of local Department of Primary Industry (DPI) officers – commonly called didimen - to assist the famers with cocoa
farming. In many areas of Bougainville cooperative societies were established and the small holders (usually family units) sold their wet bean cocoa to these cooperatives to be processed (dried) and sold to exporters. Eventually with advancement of knowledge in cocoa farming, the small holders started to process their wet beans themselves and to sell them directly to the exporters (Schneider 2012).

After the independence of PNG in 1975, DPI out-stations were established in sub-provincial districts to provide assistance to cocoa farming and processing. Cocoa farming expanded rapidly and by the mid-1980s production reached about 17,000 tonnes per year (Autonomous Bougainville Government. Commerce Department 2014). This made Bougainville one of the major cocoa producer provinces in PNG.

About 80 per cent of cocoa production was from smallholders, while about 20 per cent was produced by medium and large-sized plantations. In the 1980s there were about 106 large and medium plantations and about 70,000 small holder cocoa farms throughout Bougainville. Among the large plantations were, Numanuma, Kuruvina, Ivi, Bove, Alikua, Tepeloi, and Koikoi. Most of these plantations were foreign-owned, by companies such as the Burns Philip Trading Company. However, the eruption of the civil crisis in 1989 (ref. chapter 1) destroyed most cocoa farming as well as the processing and exporting infrastructure (Autonomous Bougainville Government. Commerce Department 2014).

Cocoa production has recovered during the post-conflict restoration development period (from 1997). This was enabled by aid from Bougainville’s development
partners, especially DFAT and UNDP (United Nation Development Programme). By 2009 cocoa production exceeded the pre-crisis levels by 15 per cent. However, in 2010 Cocoa Pod Borer affected the cocoa industry, causing production to drop by almost 40 per cent (Autonomous Bougainville Government. Commerce Department 2014).

5.2.2 Agencies involved in development of the cocoa industry
The agencies that are involved in development and regulation of the cocoa industry in Bougainville include the DPI, which deals with assisting the famers with advice on cocoa farming and the supply of suitable planting material (nurseries/clones). The Commerce Department deals with cocoa exporters/dealers, including facilitating markets and regulating investors/investments in cocoa farming, processing and marketing. The Cocoa Board, the CCI (Cocoa and Coconut Institute) and the NAQIA (National Agriculture Quarantine Inspection Authority) are statutory bodies of the PNG government. The Cocoa Board deals with quality and quantity control and the issuing of licenses for cocoa traders and exporters. The CCI is a research body that conducts research on various aspects of cocoa processing to improve quality and quantity. The NAQIA deals with the quarantine issues where dried cocoa beans are assessed for quality, treated and certified for overseas export.

Donor agencies also assist in the development of the cocoa industry. For example, DFAT has contributed significantly to cocoa development in Bougainville (ref. chapter 4). The World Bank’s involvement with cocoa development in Bougainville began in 2012, under the PPA (Productive Partnership Agriculture) program for PNG.
Among the cocoa exporters, AG Mark Pacific Ltd assists farmers through the provision of extension advice to farmers. Model farms have been established on which AG Mark Pacific Ltd’s field staff conduct training on various aspects of cocoa farming. Monpi Cocoa Export Ltd also assists farmers in similar ways, including establishment and supply of new high-yielding cocoa plants (Autonomous Bougainville Government. Primary Industry Department 2014).

5.2.3 Cocoa production

Generally there are two cocoa “pulses” (periods when cocoa yields increase) per year. The first begins in March and ends in October. The latter one begins in November and ends in February of the subsequent year. There is some local variation to this pattern. Global climate changes may have a significant influence in determining patterns of cocoa production (especially the cauliflory process: where cocoa trees bear the flowers which later develop into the cocoa pods that contain the seeds) (AG Mark Pacific Limited 2014).

Cocoa production varies in different parts of Bougainville. Traditionally north Bougainville is known for high yielding cocoa. In particular in the Tinputz district the cocoa “pulse” takes place throughout the year, unlike in most other areas of Bougainville. Other districts in the north that experience high cocoa yields are Wakunai, Kunua, Selau/Suir and even Buka Island (Interview respondent, cocoa farmer 3 on 18 September 2014). In central and south Bougainville the cocoa “pulse” (cauliflory process) varies. Some areas have higher cocoa yields than other areas in certain times and less in other times. One factor that contributes to the varying patterns of cocoa yields is the changes of climate or weather.
5.2.4 Revenue projections

Based on current estimations, about 300 kilograms (cf. above chapter 3) of dried cocoa beans is produced from a 1 hectare farm per year. This is worth about PNGK 1440 (PNGK 4.8 per kilogram of dry cocoa bean x 300 kilograms - about A$720). In the ABG 10 year Cocoa Development Plan (referred to above) it is anticipated that the 70,000 hectares of farm (cf. above chapter 3) will be improved with high yielding cocoa trees. Reflecting this, production is estimated to increase to 600 kilograms (0.6 tonnes) per hectare, making a total yield of 42,000 tonnes (6 x 70,000) of dried cocoa beans per annum.

This crop will then be worth PNGK 201.6 million (42,000 tonnes x PNGK 4800 per tonnes: @PNGK 4.8 per kilogram - about A$100.8 M). An average of PNGK 2880 (PNGK 201.6 million / 70,000 farmers - about A$1440) would be earned by each cocoa farmer. This is about a 100 per cent increase from the current revenues from cocoa (Autonomous Bougainville Government. Commerce Department 2014). So cocoa has great potential to contribute to Bougainville’s economic development.

5.2.5 Problems that affect cocoa production

There are various diseases that affect cocoa, the most common one being black pod rot. Generally cocoa diseases are caused by pests, over-exposure to sunlight (or rain) and poor management of farms (Roxanne 2001 and Thevenin et al. 2012). Moderate weather conditions are normally best for cocoa farming. Very wet weather can remove the flowers from the trees. On the other hand, dry and hot seasons may burn the young flowers and thereby reduce their potential to bear cocoa pods (AG Mark Pacific Limited 2014).
So many factors influence cocoa production in Bougainville. Below Figure 26 shows cocoa production from 1978 to 2011.

Figure 26: Cocoa production trends in Bougainville 1978 -2011

The production variations in volumes of dried cocoa production between 1978 and 2011 have different causes. The volume of production was around 15 - 20,000 tonnes per year between 1978 and 1988, with a slight upward trend. In 1989 there was a significant drop (by about 12,000 tonnes) in volume. This was almost entirely caused by the eruption of the Bougainville crisis. Violence and related disturbances affected cocoa production. The lowest production (in 1996, at about 3,000 tonnes) marks the peak of the crisis when violence had spread throughout Bougainville. Many cocoa famers, especially in the southern and central districts, were evacuated to care centres by the government and charity organizations. This resulted in the virtual collapse of cocoa production.
The 3,000 tonnes produced in 1996 would have been produced by the farmers in the north (Tinputz, Selau/Suir and Buka island districts). These districts were under government control and experienced less violence. People from these districts were not displaced from their villages, unlike those in the southern and central parts of Bougainville. The highest recorded volume of cocoa, in 2009, demonstrates the effect of DFAT’s cocoa rehabilitation program (the BCCDRP, described above in chapter 4). The volume that year exceeded that of the average pre-crisis period production by almost 15 per cent (Autonomous Bougainville Government. Commerce Department 2014).

Figure 26 indicates a drop of volume in 2010, which was caused by infestations of the Cocoa Pod Borer (CPB) pest and associated disease (referred to above). The lack of effective cocoa farm management was another contributing factor to the decline in this period. Relatively low production continued until the IPDM (Integrated Pest and Disease Management) program (elaborated on below) was developed to contain and manage CPB disease. With development and application of CPB management techniques, especially the IPDM, the volume and quality of cocoa has since risen from 2010 (Autonomous Bougainville Government. Primary Industry Department 2014).

Currently (2014) the average total dried cocoa production is about 15,000 tonnes per year. It is speculated that production will increase (possibly double) in the near future, with the development of high breed clones. These types of high yielding cacao trees have extra resistance to pests, insects and disease infections (such as
CPB), and even retain higher grade flavour in the harvested beans (Papua New Guinea. Cocoa Board 2014).

Cocoa production in Bougainville has been affected by crisis-related issues and a lack of farmer knowledge in various stages of cocoa farming and processing. To increase production there is a need to address these problems at each stage of cocoa production, from soil studies through to export of dried cocoa beans.

The rationale is that increasing production will simultaneously increase farmers’ incomes (and consumption), as well as contribute to the ABG’s revenues. After independence it will also assist Bougainville’s balance of payments. This creates the basis to propose that DFAT aid should be used to assist the cocoa industry (to improve both quantity and quality), which is vital for Bougainville’s future economic development. In fact there is consistency between recipient development priorities (as per ABG’s 10 year Cocoa Development Plan) and donor priorities. DFAT aid policy has recently been realigned towards a greater emphasis upon agricultural sector development (cf. chapter 4).

My discussion will focus on investigating current problems in cocoa production and possible future improvements. External issues, especially the continuing low-level crisis-related civil disorder, will not be included in this case study.
3. Identifying areas that need improvement in cocoa production

There are many factors that adversely affect cocoa production and limit its contribution to the economic development of Bougainville. To address these limiting factors, models of the stages involved in cocoa production will be outlined to be used as measuring standards in assessing problems related to cocoa output. The assessments of stages will begin from soil studies (for the establishment of cocoa farms) to the export of dried cocoa beans. This assessment will allow identification of where and how DFAT aid resources can be used to improve cocoa production. DFAT has the ability to provide/organise much needed training and education for Bougainville’s cocoa farmers.

Such assistance could be skills training on the proper use (or measurement) of chemicals (like fertilizer). It could be training on proper pruning and weed control techniques. Other assistance could include supplying necessary tools or equipment to be used at various stages of production (eg. nursery bags, shade cloths, pruning tools and drier facilities). Figure 27 below illustrates where interviews with farmers, exporters, DPI officials and export company officers) indicated areas where training is need to improve farmer capacity in the cocoa industry.
Figure 27 illustrates that 45 per cent of the various interview respondents nominated the importance of training on cocoa farm management as priority. Yield-maximising farm “management” include three core processes, pruning, fertilizing, and weed/pest control:

- **Pruning**, refers to cutting of unnecessary branches from a cacao (cocoa) tree to control the sunlight when the cauliflory (flowering) process takes place. This enables the process of photo-synthesis to stimulate the cauliflory process, while preventing burning of the flowers and reduction in the number of pods. Proper pruning accounts for about 80 per cent of effective cocoa farm management (AG Mark Pacific Limited 2014).
• The application of fertilizer is aimed to increase nutrients in the soil to increase the production capacity of the tree. There are different types of fertilizers used for different purposes. The two commonly used fertilizers in cocoa farming are urea and NPK (nitrogen, phosphorus and potassium). Training in the proper applications of fertilizers, both the amounts used and the time of application, will increase farm productivity.

• Weed and pest control. This requires the application of herbicide or weedicides. There are two main ways of managing weeds. One is the traditional way of cutting weeds with a bush knife (machete). The other is the application of weedicides mixed with water in the recommended ratio and sprayed using knapsacks directly onto the weeds. There are various types of weedicide that are used for different purposes. The common ones are; Gramoxone, Glyphosate, Round-Up and Amine.

Gramoxone is used to burn only the leaves. Glyphosate and Round Up are systemic, so they kill the entire weed. Amine is used to kill root weeds, like small trees and rope plants like kaukau runners. When fungi grow on the bark of the cacao it prevents the cauliflory process. Fungicide is used to treat this problem (Autonomous Bougainville Government. Primary Industry Department 2014).

As seen from Figure 27, most farmers (especially smallholders) lack the knowledge and skills for effective cocoa management. So there is a need for training on aspects of effective farm management, especially pruning. DPI Field Officers interviewed stressed this key aspect of cocoa farm management (Interview respondent, cocoa
exporter (field officer) 1 on 10 September 2014). More than anything else, correct pruning contributes to improving the cocoa yield.

Figure 27 shows that pest and disease control (at 27 per cent of the interview respondents’ priorities) was the second-most recommended means for improving cocoa production. This is achieved with various insecticides and pesticides. These are usually mixed with water at a recommended ratio and sprayed onto the trees with a knapsack sprayer. The stages where insecticide is used includes seedlings at the nursery, newly planted young cacao trees and older ones that might have been affected by pests or disease. The common type of insecticide used is \textit{lambda cyhalothrin}, sold under name of Karate (Papua New Guinea. Cocoa Board 2014).

Again training of cocoa farmers is urgently needed to ensure application in the correct doses and at the appropriate times.

The other two areas recommended by interview respondents - wet bean processing (by 23 per cent) and soil study (by 5 per cent) - done properly can increase cocoa production. These are discussed below.

\section*{5.3.1 Soil nutrients in cocoa farming}

Identifying an area of land with appropriate soil nutrients is an initial necessity for establishing a cocoa farm. This is a specialised skill, best undertaken by an agronomist. This investigation also determines the type of fertilizer that is needed, either to prepare the soil for a new farm or to revitalise soil nutrients on existing cocoa farms.
An extensive soil study throughout Bougainville (even including the outer-atolls islands) has been conducted by Bourke and Betitis (2003). Their findings were published in a book titled ‘Sustainability of Agriculture in Bougainville Province’. This book provides the information on areas suitable for cocoa farming; farmers need to be made aware of its application to their local areas.

Currently there is a lack of information on soil, its nutritional value and soil suitability for cocoa farming. At present farmers (especially smallholders) establish their cocoa farms on their traditionally owned land, regardless of whether or not that particular piece of land, contains appropriate soils for cocoa farming. This results in instances where people establish cocoa farms on land that lacks the appropriate soil nutrients and results in unprofitable cocoa yields (Interview respondent farmer 2 on 18 September 2014). This wastes the farmer’s resources and time. Hence, the appropriate extension service information about soil quality would be of benefit to many farmers, particularly in identifying the nutrients to be supplemented by fertilizers.

5.3.2 Nursery establishment and management

The establishment of nurseries is the initial activity required for cocoa farming. The steps involved in establishing nurseries include: selection of seedlings or clones, nursery (poly) bags, building of a nursery shade shelter, the application of pesticide or fertilizer and watering of seedlings/young cacaos. The number of trees in the nursery is determined by the land area selected for the cocoa farm. This is a much more complex process than it might seem. According to an extension officer the
(Interview respondent, cocoa export (field officer) 1 on 10 September 2014) the key aspects for establishing a good nursery are:

- **Soil**: to ensure, the soil used for filling up nursery (poly) bags has the required nutrients for cocoa. In some cases the soil is loaded into empty drums (or any large cylindrical metal container) and heated with fire to kill the bacteria that might affect the nursery seedlings.

- **Nursery bags**: it is important to make sure that proper sized nursery bags are used. The bags have to contain sufficient soil to nourish the seedlings until they are ready for transplanting.

- **Shelter**: it is also important to ensure that proper shade cloth is used to build the nursery shade shelter. This is necessary to ensure there is enough sunlight and rain reaching the seedlings.

- **Seed preparation**: there is also need for proper preparation of seeds for the nursery or clones from the selected parent cacao. Clone preparation needs more skills and hence training for setting the buds on the parent cacao.

- **Water management**: it is important to make sure there is access to sufficient water, especially during the dry season, for watering the young cacao trees. A proper drainage system is necessary, to ensure that excess water from rain does not flow onto the poly bags and drown the seedlings or wash them away.

- **Clone management**: proper clones need to be used. It is advisable to ensure that the type of clones used are certified clonal buds (18 newly released
clones by CCI have been developed to promote high yield and high grade favour, as referred to above).

- **Chemicals management**: precautions must be taken to ensure proper handling of chemicals (fertilizer, insecticides and weedicide) for the safety of the farmers and effectiveness of the outcomes. Inappropriate use of chemicals can be hazardous to the farmer and adversely impact on the success rate of the seedlings.

- **Transplant timing**: the recommended period for the nurseries to be ready for transplanting to the cocoa field is generally after 6-9 months. The timing can vary depending on the maturation rate of the young plants. If they grow quickly, the timeframe is decreased and vice-versa. Over-grown nurseries (young cacaos) are not advisable given that, left too long, the seedlings’ roots can break through the poly bags and penetrate into the soil, reducing successful transplanting.

Currently most of the local farmers lack accurate knowledge of the above issues and are not following the proper procedures for nursery management and transplanting. They are following procedures that have become common practice over the past decades without realising that these may be inhibiting yields (Interviewee respondent, cocoa farmer 6 on 14 October 2014). For example, farmers tend to use any soil to fill the poly bags without considering soil nutrients. Or they use soil that is too wet for the seedlings.

Skills training and awareness of the proper materials and processes required for the establishment and management of cacao nurseries is urgently needed.
5.3.3 The establishment of a cocoa farm

Establishing a cocoa farm occurs in three steps. A piece of land is selected. It is then cleared of the natural cover. Finally preparing the soil sees measuring the rows for planting young cacao trees onto the cleared field. Farmers commonly remove all vegetation before planting, instead of leaving soft vegetation to form mulch and fertilize the soil and prevent the leaching caused by rain (Autonomous Bougainville Government. Primary Industry Department 2014).

The standard recommended spacing of cacao trees is four metres apart. It is advisable to plant the shade trees prior to the young cacaos. Shade trees (in Bougainville usually *glyricidia*) provide protection for the young trees. The recommended spacing for the shade trees is in the ratio of four cacaos to one shade tree. Improper spacing of shade trees can lead to problems. Too much shade and the young cacaos do not get adequate sunlight, which affects flowering and so limits production. If planted too closely together shade and cacao trees tend to touch (or even inter lock) which may result in damage to the pods, which then become a vector for disease or pests. It is recommended that the shade trees be removed after the cacao trees are fully matured and able to resist strong sunlight (Papua New Guinea. Cocoa Board 2014).

There is lack of information among Bougainvillean cocoa farmers on the proper methods for the establishment of cocoa farms. As alluded to above, farmers tend to establish cocoa farms on their traditionally-owned land without considering the factors that might affect production. One interview respondent (farmer 5 on 14 October 2014) in Kieta district, stated that the farmers are not using standard
measurements for cacao fields for various reasons. Some plant too closely, with the rationale to plant more cacaos within the piece of land. Others use wider spacing, arguing the cocoa farms need more sunlight to be high yielding.

5.3.4 Impact of weather patterns on cocoa production

Weather patterns affect the production and the health of cocoa pods. Generally, Bougainville has two main seasons, wet and dry. Dry seasons with warm temperatures are good for cocoa farming, while rainy seasons reduce production (Neilson 2010). Excessive rain causes soil erosion and leaching, as well as floods which may wash away cocoa farms. There are also cases where storm winds blow cocoa trees down.

The problems related to weather patterns can be managed or at least minimised in various ways. The washing away of cocoa flowers during rainy seasons can be minimised by spraying the flowers with a chemical called copper sticker. The other method that can be used to control damage by rain is controlled pruning. Soil erosion is managed by having a proper drainage system (Papua New Guinea. Cocoa Board 2014)

Currently most farmers in Bougainville insufficiently understand the problems caused by weather patterns and how these affect cocoa production. There is also a need for skills training on proper chemical management (especially for copper sticker). Training should be also conducted on proper (controlled) pruning and the drainage systems of cocoa farms.
5.3.5 Disease, pests and insects control

The common diseases that affect cocoa farms are: black pod, monilia, witches’ broom, vascular streak dieback, ceratocystis wilt of cacao, and swollen shoot virus (Olu-Owolabi et al. 2012). Currently in Bougainville, one major factor that affects the production capacity of cocoa farms is diseases and pests (Interview respondent, cocoa exporter 1 on 10 September 2014). Cocoa diseases can affect cacao leaves as well as pods and beans. There are also worms that eat the bark and eventually get into the cacao trees. Leaves are also eaten by pests or insects. Pods are affected in various ways, including black pods and hardened cocoa beans. Such pods have been infested by Cocoa Pod Beatles and destroyed completely and can no longer be harvested for processing. Another problem is where the stem root of the tree is affected by worms, which cause it to die (Interview respondent, farmer 3 on 18 September 2014).

The application of Integrated Pest and Disease Management (IPDM) is one of the most systematic strategies used for the pest and disease management of cocoa farms. Briefly there are four options for IPDM that can be adopted (for details of IPDM refer to appendix 5). The relevant options are selected depending on the level of infection on specific cocoa farms. Generally the IPDM involves application of various chemicals and also effective farm management. One farm management strategy is to regularly remove and bury infested pods and pods husks after each harvest. The application of IPDM in several cocoa farms showed that CPB is manageable (cf. Figure 28) (Autonomous Bougainville Government. Primary Industry Department 2014).
Clones that are resistant to pest and disease (especially CPB) have been developed. These offer one means to reduce the impact of pests and disease (Thevenin et al. 2012). Currently, the distribution of these planting materials is very slow due to lack of funding from the DPI and donor agencies (Papua New Guinea. Cocoa Board 2014).

5.3.6 Wet cocoa bean processing

The duration and management of fermentation has a significant impact on the quality of the dried beans (Guehi Tagro et al. 2010). This stage was recommended by 23 per cent of interviewees as a key training area for improving the cocoa industry (ref. Figure 26 above). Wet bean processing begins with harvesting, when the pods are removed from the trees and opened to remove the beans and lay them on fresh banana leaves. Great care must be taken not to damage the wet beans. Damage caused to the “cushion” (skin of the cacao tree) during harvesting reduces production, while damage caused to beans affects quality (Autonomous Bougainville Government. Primary Industry Department 2014).

After harvesting the wet beans are transferred to fermentation boxes about 1 cubic metre in volume. The top of the boxes are covered with fresh taro leaves and fermentation commences. Care has to be taken both to ensure the correct types of wood are used for the boxes and that they are not too big, which can cause rot rather than fermentation (Papua New Guinea. Cocoa Board 2014).

The wet cocoa beans are transferred (turned) consecutively from one box to another for about seven days. The duration of this activity depends on the judgement of the farmer on whether the beans have been adequately fermented.
and are ready for drying. The productivity of this phase of production significantly depends upon the experience and acumen of the farmer. The wet cocoa beans are then loaded onto the drier, a fire is laid in the kiln pipes to heat it up and to dry the wet beans for at least three days. Again this is a skilled process; care must be taken to apply the right level of heat to avoid burning the beans while drying them.

Proper drying of cocoa is critical in determining the final quality of the dried cocoa bean. The size and structure of the drier also contributes to the eventual quality of the dried beans (Papua New Guinea. Cocoa Board 2014). Although sun-drying was used in the past and was regarded as the best method (Guehi Tagro et al. 2010), in Bougainville this method is now rarely used. The dried beans are then loaded into cocoa bags to a recommended weight, normally 63.5 kilograms (AG Mark Pacific Limited 2014).

Based on my interviews, in Bougainville farmers lack of knowledge of proper wet bean cocoa processing. There is need to facilitate training and awareness of the steps involved in wet bean cocoa processing (harvesting, fermentation and drying). Experts from the DPI and the PNG Cocoa Board and/or cocoa exporters should assist in this education.

5.3.7 Storage of dried cocoa

Dried cocoa beans have to be stored in warm, dry places, normally in huge cocoa sheds. The dried beans could be affected by insects or even rot if not stored properly. In some cases, if cocoa beans are not stored properly, fungal infestation can destroy the flavour of the beans and result in degraded quality. According to the records of the PNG Cocoa Board (2014), in Bougainville most of the exporters
have cocoa storage sheds. There are others that store their dried cocoa in sea-containers. Assessment of the condition of these storage facilities is needed to ensure that they maintain the quality of dried cocoa. There are two huge sheds in Kangu and Panakei built for this purpose but, due to unforeseen factors (cf. Chapter 4 above), these have never been utilized. These facilities need to be operationalized by improving the road access to them.

5.3.8 Supply, demand and markets for dried cocoa

Buying and exporting cocoa in Bougainville is carried out both by local and also expatriate owned companies. The actual records for the cocoa exported were not available at the time of my fieldwork. However, to indicate the level of production, between July and September about 5,834 tonnes was shipped out of Kieta wharf (Papua New Guinea. Cocoa Board 2014). We could assume that annual production in north Bougainville area is now about 20,000 tonnes.

Because Bougainville produces only a tiny fraction of world cocoa supply, it is a “price-taker” in the market. The current market strategy for Bougainville cocoa is to improve quality so it can access the higher prices of the niche market for high quality confectionary. On the other hand some cocoa exporters advocated a scale response to the market, arguing for increased volumes of exports (Interview respondent, cocoa exporters 2 on 22 September 2014) as a strategy to grow incomes. This case may have some merit, because it will be difficult to develop high quality cocoa production unless the farmers are properly trained and equipped. Whatever the merits of the first argument, there is currently a lack financial support/investment to build the capacity of the local exporters.
5.3.9 Procedures involved in cocoa export

There are complex regulatory procedures with which cocoa exporters have to comply. There are at least seven conditions they have to meet.

Firstly, the cocoa buyer or exporter needs to have two licenses: for buying dried cocoa beans from local farmers and for overseas export. Both are issued by the PNG Cocoa Board upon the trader meeting certain requirements. In order to obtain a dried cocoa buyer’s license, the dealer needs to have sufficient funding and be certified by PNG Cocoa Board as having: a company profile that includes a dry cocoa dealers license; be registered with the PNG IPA (Investment Promotion Authority); employ technical people/dry cocoa assessors /inspectors and possess relevant management expertise, including being a qualified cocoa trader of international repute who can demonstrate expertise in international cocoa trading. All of these factors have to be verified by the PNG Cocoa Board officials.

Secondly, the exporter needs to have adequate capital; currently at least K500,000 (about A$ 250,000) and above is required. A copy of a bank statement and a verification letter from a recognised bank may be required for verification purposes.

Thirdly, the buyer needs to have access to an international port (wharf) for export, which may need PNG Border Authority verification of the port as commissioned for export.

Fourthly the exporter needs to show an ability to purchase or produce a volume of about 1,000 tonnes of dried cocoa per year. Any exporter who is unable to meet the minimum volume will be required to justify why their license should not be cancelled. Fifthly, the exporter needs to demonstrate an ability to control quality,
which implies a need to have a credible quality-assessing mechanism to assess cocoa at the point of sale (that is at the local depot). The major aspect checked is the moisture content, as well as the condition and flavour of the dry beans.

Sixth, the exporter needs to meet required quality control standards, including verification by the NAQIA that the quality is consistent with the weight notes provided by the quality assessor at the local depot. As a means of certification NAQIA puts a quality stamp on every single bag of dried cocoa beans.

Seventh, the dried cocoa bags are stamped as certification-approved cocoa and can then be fumigated (with methy-bromide chemical). This both maintains the quality and protects the cocoa from being damaged by pests or fungal infestations during shipment and other pre-processing stages. Normally the fumigating company must be Australian-certified. After the fumigation is completed, an export certificate is then issued to the cocoa exporter. Finally the dried cocoa beans are ready for shipment to the buyers or manufacturer overseas.

Bougainville exports cocoa to Europe, Asia and the Pacific. It is generally expected that cocoa prices will rise in the future as there is an impending world market supply shortfall (Papua New Guinea. Cocoa Board 2014). Because of this complex administrative system, there is a need for training for cocoa assessors, as well as the establishment of cocoa inspection depots to assess and certify dried cocoa beans for export.

A study conducted by Walker (2000), in south-western Nigeria, indicated that the cocoa price increased with the adoption of a Structural Adjustment Program, where the Cocoa Board was abolished and stakeholders (exporters) took control of export
markets and producer prices increased. This example could throw some light on how cocoa prices can be improved for Bougainville farmers. The complex administrative and regulatory structure imposed on Bougainville cocoa buyers has high compliance costs (and possibly provides a fertile environment for bureaucratic corruption).

The high regulatory compliance costs cannot be recouped from the international market as Bougainville is a price-taker; inevitably it means that cocoa farmers get paid less. If the farmers are paid less they have lower incentives to invest time and labour (and money) in better production methods. This also has the effect of preventing the conversion of the Bougainville cocoa industry into a niche supplier to the fine chocolate market. So the regulatory environment for cocoa exporters is closing off development possibilities for Bougainville.

5.3.10 Transport related to the cocoa industry

The poor state of it’s roads also has adverse consequences for the cocoa industry and Bougainville’s development. The poor roads means that transport companies face high maintenance costs for their vehicles. They consequently charge more for carrying cocoa to shipping points. The farmers once again end up with less income and less incentive to invest in raising the productivity of their farms or the quality of their beans. In some areas farmers cannot access freight transport. The inability of farmers to access transport creates a situation where cocoa buyers (usually local businessman) buy the dried cocoa beans from the local farmers at much lower prices compared to the price paid at the depot by exporters. This situation also reduces farmers’ incomes.
Currently there is no port in Bougainville that is able to directly export cocoa to international markets. This is for two main reasons. Firstly, the exporters cannot aggregate sufficient cargo volumes to attract big cocoa ships and cargo boats to come to Bougainville. In addition, the only two ports in Bougainville (Buka and Kieta) are quite shallow and therefore cannot berth large commercial shipping vessels (such as SWIRE or Bank Line). These problems, common to most SIDS (ref. chapter 3), limit Bougainville’s development. Consequently, Bougainville’s cocoa is exported via PNG’s international ports. Some other local dried cocoa buyers (such as STI Trading) sell their dried cocoa to overseas markets via wholesalers in Rabaul, PNG. Figure 28 below indicates the new infrastructure - recommended by key cocoa dealers and other experts I interviewed - as necessary to boost cocoa development in Bougainville.

Figure 28: Type of infrastructure required to boost cocoa development

<table>
<thead>
<tr>
<th>Type of infrastructure recommended to boost cocoa development on Bougainville</th>
<th>Percentage of various cocoa dealer’s (DPI &amp; export officers, exporters, farmers and transport owners) interview respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wharves and jetties</td>
<td>41</td>
</tr>
<tr>
<td>Roads</td>
<td>36</td>
</tr>
<tr>
<td>Bridges</td>
<td>18</td>
</tr>
<tr>
<td>Wet bean cocoa processing facilities</td>
<td>5</td>
</tr>
</tbody>
</table>

The largest proportion (41%) of these stakeholders identified maritime infrastructure as a priority for the cocoa industry. The rationale behind this could be that they believe that better wharves and other port facilities would enable direct export of dried cocoa from Bougainville, which would increase the price received locally. This point should be qualified by the fact that most places that produce cocoa in Bougainville (except for Torokina district) are accessible by road. The outer
atolls require jetties for general development purposes but do not produce cocoa and so are not relevant here.

The absolute majority of 54 per cent of interviewees (36% for roads and 18% for bridges) argued that land transport is important to bolster cocoa development. Most cocoa farmers used roads in every cocoa development stage, from nursery establishment to the sale of their dried beans. More efficient road transport is important, not just for cocoa but for general development.

5.3.11 Quality control

The price of dried cocoa is determined by its quality. Better quality means higher prices, which ultimately benefits both local farmers and cocoa buyers/exporters. There is ample international evidence of the nexus between the quality and price of agricultural products. Jones and Gibbon (2011), argued that adoption of technology to improve cocoa quality increased revenues for farmers in Uganda. Similarly quality control is a major issue for Bougainville’s cocoa industry. One cocoa exporter in Arawa, claimed that he removes about 3-5 kilograms of waste cocoa beans together with other foreign objects from each dried cocoa bag purchased from local farmers (Interview respondent, cocoa exporter 5 on 25 September 2014).

Quality starts from the type of nursery or the planting materials. The latest cacao clones (referred to above) produce beans of about 90 per cent fine flavour. PNG Cocoa Board Officials (Report 2014) reported that Bougainville (as part of PNG) has high quality dried cocoa resulting from these planting materials. A small amount of cocoa is smoke-tainted, due to broken kiln pipes and chimneys in the drier. The poor condition of driers can also result in a too-high moisture content of dried
cocoa beans. These problems could be addressed by upgrading or renovating the dryers by using proper kiln pipes (Papua New Guinea. Cocoa Board 2014).

Another major impediment to cocoa quality control and/or maintenance in Bougainville is the absence of a PNG Cocoa Board inspection depot. Currently in Bougainville buyers and exporters have their own dried cocoa assessors, who have been trained and certified by the PNG Cocoa Board. A cocoa inspection depot existed prior to the crisis but was not restored during the post-conflict development period.

The absence of a government cocoa inspection depot means most of the farmers’ dried cocoa beans are purchased at the average price, based on the buyers’ assumption that the quality is low and the beans will require re-processing at the expense of the cocoa exporter (Interview respondent, cocoa exporter 1 on 10 September 2014). This interviewee also stated that currently the PNG Cocoa Board, NAQIA and DPI quarantine officers only regulate the treatment and certification of dried cocoa before shipment for export upon the request of cocoa exporters. This situation implies there is no government-owned mechanism in place to consistently regulate cocoa production and quality.

Below Figure 29 shows the different areas that the various cocoa dealers I interviewed recommended as key measures for improving quality.
Figure 29: Aspects of production needed to improve the quality of cocoa

Figure 29 shows that most (56%) of the interviewees argued that wet bean processing is fundamental to improving the quality of cocoa. This is consistent with key cocoa dealers’ views referred to in Figure 28 before, where 23 per cent argued that wet bean processing is crucial for improving the quality of smallholders’ cocoa. Farm management was recommended by 19 per cent as another important element for improving the quality of cocoa. This included pruning, which was argued to account for 80 per cent of proper farm management (based on documents from AG Mark Pacific Limited above).

Another 19 per cent recommended the establishment of an inspection depot as important to improve the quality of dried cocoa, which reinforces the discussion above. The development of high yield cocoa to improve quality, which was nominated by six percent of the respondents as necessary to improve quality, has
implementation issues related to soil suitability. The potential quality might not be fully realised if the farms lack relevant soil nutrients or do not use appropriate fertilizers.

The responses about quality control reveal a need to set up government mechanisms, especially a cocoa inspection depot, to regulate and control the quality of dried cocoa beans. This would require additional HR capacity development of the DPI’s extension agents (“didimen”) or the PNG Cocoa Board’s staff. A HR training needs assessment could be conducted within DPI and the Cocoa Board so key areas responsible for quality improvement can be identified and training facilitated with assistance through DFAT aid via ACIAR (Australian Centre for International Agricultural Research) personnel. This agency is responsible for agriculture-based research and development (McMahon et al. 2009).

The above analysis covered the main stages involved in cocoa production, from soil study to export. The analysis identified areas that are lacking the capabilities required to improve quality and increase quantity.

This discussion also provides a basis on how and where DFAT aid resources can be used to improve the cocoa industry in Bougainville. Aid resources should be allocated to the identified areas to address current problems effectively. In implementing the recommended tasks and activities involved in cocoa development, the features of an effective aid management model (ref. chapter 2) will be employed.
4. Mapping areas to utilize aid in cocoa production

Effective aid management principles and models (types of aid) should be used to guide and facilitate the utilization of DFAT aid resources into the problematic areas (identified above) to improve cocoa production.

5.4.1 Types of effective aid management principle

Based on the experiences and judgements of my interviewees (ref. chapter 4), there are two effective aid management principles relevant for this case study. The first, is the ‘Good Policy’ environment, where the recipients take ownership of aid and development issues. Aid will be more effective if it is accompanied by a “Good policy”, where the donors and recipients both know what is required to be done to achieve shared goals. The absence of such consensus could result in a mismatch between donor priorities and recipient objectives, which leads to aid ineffectiveness and/or irrelevance.

In this case the policy should result from inputs by all the parties that are involved in cocoa production. These will include DFAT, as donor, the key government agencies involved with the cocoa industry - including DPI and export officers, the PNG Cocoa Board, NAQIA and CCI officers as aid recipient, and farmers and exporters as its beneficiaries. Basically the input by DFAT can be in the form of funding assistance.

Key government agencies in the cocoa industry can assist with HR and technical advice. DFAT (eg. through ACIAR as referred to above) can also assist with HR skills creation where key government agencies may lack expertise. One area that needs high level skills and technology is conduct of soil analysis studies.
The second aspect of the effective aid management principles relevant here is
‘Effective coordination’. This involves both donor and recipient knowing their goals
and objectives and efficient coordination between them. That is basically the 3Ws
principle, which determines, who does what and when. Efficient donor-recipient
coordination of the formulation of aid programs will enhance management and
accountability. Improved accountability, especially at the implementation stage
from government agencies/officials can also minimise the corruption which leads to
aid ineffectiveness (cf. chapter 4).

Consultative coordination will identify issues and challenges that affect the cocoa
industry. The DPI, CCI, NAQIA and PNG Cocoa Board officers should provide data
and work plans to DFAT officers, indicating various facets of the cocoa industry that
need to be improved. This will set the basis for DFAT to allocate aid resources
(direct funding or subsidised HR expertise) to address these issues.

In the actual implementation of this coordination the key government agencies
(referred to above) need to monitor and evaluate each stage of cocoa development.
These government agencies need to provide feed-back to the DFAT on the
achievements and failures and what needs to be done next. If some aspects of the
activities already implemented are ineffective, better analysis can be conducted to
properly define the problems and re-scoped funding provided to effectively address
these problems.
5.4.2 Type of aid model proposed

For this study I intend to use the tied aid model (ref. chapter 2), where the aid resources will be pre-allocated to specific areas, as identified by the key government agencies of the cocoa industry in consultation with the various stakeholders. This model is deemed to be appropriate to minimise corruption, as financial flows will be tied to specific defined activities in cocoa development.

Identification of facets of each cocoa production stage that need to be improved should be done through consultations between farmers and exporters and the key government agencies, so that the ABG and Bougainvillean farmers will take ownership of the project and ensure alignment between donor priorities and recipient objectives (as described in chapter 2).

This process will serve as a road-map to addressing the factors that effectively limit the production of cocoa in Bougainville and how they can be addressed through the utilization of DFAT aid.
5. Summary

The analysis above was aimed to explore and identify potentially problematic areas in the various stages of cocoa production. The discussion revealed that there are various factors that affect and/or reduce both the production and quality of cocoa in Bougainville. Most of these problems flow from a lack of knowledge or skills in cocoa farm management in the various stages of cocoa production. Other problems are cocoa diseases caused by pests and insects, and weather patterns and/or climate conditions. These also can be tackled with appropriate information provision and capacity training of the cocoa farmers. Lack of proper infrastructure that facilitates cocoa production was also raised by various stakeholder interviewees (see Figure 28) as limiting cocoa production.

The key areas for improving cocoa production are farm management and wet bean cocoa processing. Correct pruning is argued to account for about 80 per cent of effective farm management. Proper fermentation and drying are seen as key to processing wet beans into high quality dried cocoa, which then attracts higher prices for the farmers (and ultimately the exporter).

Recommendations were made on how these problems can be addressed through utilizing DFAT aid to boost Bougainville cocoa’s quality and quantity. The rationale is consistent with the theoretical aid framework outlined in chapter 2. Hence, DFAT aid is intended to be used for purposes of economic development by improving cocoa production. This is intended to generate revenues for farmers and others involved in this industry, including transport owners and exporters. The ABG will also eventually benefit through increased tax revenues.
Chapter: 6

Conclusion

The contemporary literature on foreign aid and development reflects that donating and receiving aid leads to development issues and challenges. The controversies related to why, how and where aid is effective (and/or ineffective) is significant among many issues in the debate about aid-driven development.

The focus of this study is on Bougainville’s economic development challenges as a SIDS and how these have been exacerbated by the 1988-97 conflict. Bougainville is like a SIDS/poor dependent territory of PNG that needs capital if it is to develop because the population is small and poor and cannot develop by themselves. Therefore aid is one option available that can be used to stimulate Bougainville’s future economic development.

This study particularly explores how and where DFAT aid resources can be better utilized for the future economic development of Bougainville. The discussion indicated economic development needs for Bougainville arise from two main factors. The first is the need to recover from the 1989-97 conflict, which resulted in massive destruction of infrastructure and reversed development, almost driving Bougainville back to subsistence production (as discussed in chapter 1). Secondly, Bougainville’s development challenges emerge from five sets of factors that are
common to SIDS (cf. chapter 3). One consequence of these factors was limited development assistance provided by the cash-constrained ABG and also the donor agencies.

So the challenges that face Bougainville now are to restore economic infrastructure, establish a governmental structure that can provide law and order and health, education and development services and the associated infrastructure to a population that has limited capacity for self-assistance. Obviously development aid can play a central role in assisting the ABG to achieve these objectives. DFAT aid is especially crucial both because of its scale and its ability to give Bougainville access to specialist knowledge and technology.

Previous experience shows that DFAT aid to Bougainville has been both effective and ineffective in different circumstances. Here “effective” refers to where the aid projects actually serve their primary purposes in improving the lot of the intended beneficiaries. Ineffective refers to situation where the aid projects only partly achieved or did not achieve their intended outcomes.

The reasons as to why DFAT outcomes are ineffective in some circumstances vary according to circumstance. These can be: deficiencies of aid policy and procurement processes in allocating aid resources, poor implementation of aid-funded projects, and inappropriate project selection. My findings (in chapter 4) proposed that the main reason for aid ineffectiveness in some circumstance was a lack of application of effective aid management principles. Analysis of experiences and data from interview respondents indicated that there are two main facets to this failure. The
first, as outlined in chapter 2, is the ‘Good policy’ environment, where the aid recipient takes ownership of aid and development issues. The ABG has processes such as PID, (ref. chapter 4), for identifying and/or formulating projects. These may have been overridden by aid donors anxious for quick and obvious results. The saga of the two produce depot sheds at Kangu and Panakei illustrates this problem. Here the DFAT aid proceeded even though the supporting road transport infrastructure was unable to allow the farmers to supply these commodity depots.

Most (88%) of the ABG officials interviewed felt that DFAT controlled aid programs and/or projects in Bougainville. This suggests a lack of aid ownership by the ABG and aid allocations not following the ABG’s financial management processes. My findings reflected that when DFAT strictly complies with its national (Australian) aid policy, the level of ownership of aid programs by the ABG decreases (ref. chapter 4: Figure 19). The tensions between donor policy and accountability requirements and recipient priorities and management practices is insufficiently considered in the literature. The donor concern with strict accountability (possibly partly a reaction to actual or potential recipient corruption) strangles the aid relationship. The only “solution” to this conundrum is a healthy dialogue between both parties.

Lack of “Good Policy” (ref chapter 2) led to aid resources being allocated to areas which were not necessarily development objectives for Bougainvilleans. This resulted in some aid projects never being used for their intended purposes. In addition there are cases where some aid projects and programs (including, legislation, policy-making and peace-making ceremonies) continue to be funded despite these not making much progress (cf. chapter 4). Some of these ineffective
projects are funded outside of the ABG PID process (cf. chapter 4). This can be seen as wastage of resources that can be better used for other development priority areas. This argument is strengthened when we see that the districts that have undergone the greatest economic recovery since 1997 are also the areas where lawlessness and unrest is now minimal.

The second aspect of effective aid management principles is ‘Effective coordination’, where the donor and recipient know what to do, who will do it, and when it will be done. Lack of effective coordination between DFAT and ABG officials refers particularly to the project identification/formulation stage, which determines allocation of aid resources to projects (cf. Figure 18). Coordination at the implementation stage takes place mainly between the ABG agencies responsible for aid projects (infrastructure, policy/legislation developments, awareness/workshops, etc.) and contractors and/or facilitators.

It appears that there has been insufficient policy dialogue between DFAT and ABG officials. Most (88%) ABG officials interviewed claimed that there was a lack of interactions between DFAT and ABG officials in identifying/formulating aid projects (eg. determining where aid resources are allocated: cf. Figure 20). The ABG officials interviewed claimed that DFAT officials controlled aid allocations to be consistent with overall and operational DFAT aid policy frameworks. However, although there may be some lack of DFAT–ABG policy coordination, most (60%) DFAT officials interview respondents argued that aid allocation was determined by the ABG’s development needs (cf. Figure 19).
One example of too-rigid compliance with accountability to DFAT aid policies, especially in disbursement of funds, were the GIF’s “no cash advance” and “compulsory acquittals” management practices. The GIF mechanisms were developed to address misuse of funds (cf. chapter 4). However, these were seen by some ABG officers as counter-productive to development progress, as they did not take into account unforeseen circumstances (particularly meetings scheduled at short notice).

My research also indicated that the lack of coordination at implementation partly occurs because of ineffective management systems within the ABG’s aid projects implementation departments (cf. chapter 2: Figure 6 above). The HR areas that DFAT interview respondents argued were lacking in the two of them - accountability and effective management - are practices and skills needed for effective coordination.

The lack of effective coordination leads to corruption, such as the misuse or theft of aid resources. There are few ways corruption is practised. My analysis showed there have been incidents where aid officials (especially recipients) involved in the procurement process (awarding contracts, selecting project and allocating resources) take advantage of the lack of effective coordination as an opportunity to pursue their personal interests. Some contractors used aid resources for their personal (or business) purposes (cf. chapter 4). Such corruption may also result from or be condoned by Bougainvillean cultural-cum personality traits (the wantok system and “don’t” care attitude, discussed in chapter 1).
In mapping out an aid and development model for Bougainville’s future development the focus was on how problems and challenges can be addressed to make aid more effective. As briefly mentioned above, the approach adopted in this study was to prioritise economic development. This can be achieved by improving two aspects of the aid relationship - good policy environment and effective coordination – in the implementation of an aid-driven development model for Bougainville. This approach had favourable outcomes in some previous DFAT aid-funded projects in Bougainville (discussed above: chapter 4).

My findings (in chapter 4), via both documentary analysis and interviews with DFAT and ABG officials, reflected that there is mutual agreement that economic development is a priority for both DFAT and the ABG. The cocoa industry was selected as a suitable case study, whereby DFAT aid resources could be utilised to assist economic growth for Bougainville. The selection of cocoa was based on certain decision criteria, mainly to do with the potential of the industry. A roadmap of the various stages (from soil studies to export of dried cocoa beans) involved in cocoa production was developed. Inherent weaknesses within each of these stages were identified and served as indicators of where and how DFAT aid resources could be used to boost the cocoa industry in Bougainville.

Most of my recommendations (cf. chapter 5) on where to commit aid resources to increase and/or improve cocoa production can be summarised as addressing three key areas.
1. **Road transport infrastructure.** This is aimed to make sure that the farmers’ produce reaches a point of sale. This will give confidence to the farmers to see cocoa as a viable and beneficial industry. Hence, it will motivate them to put in the effort to improve cocoa production and quality. Furthermore better roads will enable the currently moribund DFAT aid-funded projects – the Kangu wharf and shed and the Panakei shed (discussed in chapter 4) - to be used for their intended purpose.

2. **Improved management.** From my analysis (cf. chapter 5) it is evident that the farmers need DPI field extension officers to give them continuous technical assistance. A long-term strategy would be for DFAT to assist in the production of skilled Bougainvillean DPI field extension officers or “didimen”. There is a CCI Research Centre in Kubu, Buka district where such training can be facilitated. Training assistance, especially for technical expertise in cocoa farming can be sought from ACIAR if/when required.

3. **The restoration of a government inspection service.** This will enable enhanced quality control, which also determines price. This activity will require building inspection sheds at the main points of sale (currently Buka and Arawa). It will also require installation of instruments and training for this inspectorate’s personnel. Currently the agency responsible for inspection is the PNG Cocoa Board. Prior to the possible independence of Bougainville this dependence on the PNG Cocoa Board will require drawdown of powers and functions from the PNG government through the process discussed above (chapter 1).
If these three key issues are addressed all the other stages involved in cocoa production will be systematically improved. In fact previous DFAT aid to the cocoa industry achieved a favourable outcome in those areas where it was applied (cf. chapter 4).

My analysis reflected that various aspects of SIDS, that limited their economic development, also applied to Bougainville. The most significant of these is the small volume of cocoa produced (which meant infrastructure had high average costs) and the industry’s difficulty in accessing satisfactory land and sea transport. The latter affects the access of cocoa farmers’ beans to local, national and international markets. For example, the current low volumes of dried cocoa beans does not warrant the investment in wharves that will allow large cocoa carrier ships to convey exports out of Bougainville directly to international markets. Increased production means better economies of scale – for both farmers and government and cocoa buyers – and hopefully improved access to international markets.

This is not to ignore the difficulties faced in all development processes, especially in post-conflict situations, as well as the difficulties of securing sustainable rural development through smallholder commodity production with poor links to markets. I have also noted that Melanesian cultural values and practices in Bougainville provide particular challenges to economic development (cf. chapter 1).

Nevertheless, in facilitating each stage of cocoa production, the effective aid management principles and the appropriate aid model advanced above, can minimise corruption and any mismatch of donor and recipient priorities. Therefore
DFAT aid resources are better allocated to economic activities that will directly promote revenue generation and to those (such as transport infrastructure) that indirectly facilitate economic development processes. Currently, among the barriers to economic development are land issues, poor transport systems and a lack of expertise in some technical aspects of production by smallholder Bougainvillean cocoa farmers (as discussed in chapter 3). Aid-driven facilitation of solutions to those problems will permit better utilisation of Bougainville’s potential resources for economic development.

The rationale of reformed aid-driven development is to increase the revenues generated through indigenous economic activity (for this study, cocoa). This will improve the farmers’ incomes and provide the ABG with the increased tax revenues required for facilitation of other social or political development objectives. It creates a “virtuous circle” of progress. This is critical to overcome factors that limit Bougainville’s development as a post-conflict SIDS territory, as well as to prepare it for possible full Independence following a referendum in the near future.
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Appendices
Appendix 1

Process involved in implementing ILG

1. Formation of incorporated land groups – ILG ACT Amended 2009

a) Social mapping

This involves conducting a social mapping (genealogical survey) and land investigation aimed at identifying the legitimate portion of people (clan group) who own a particular piece of land. In cases where there maybe disputes over ownership of a particular piece of land it has to be settled.

b) Registration of Clan Land Boundaries

After identifying and confirming the legitimate landowners through social mapping and land instigation (explained above) of a particular piece of land the boundaries they share with others are registered with ABG Lands Division.

c) Land owner are proven by the birth certificate

As a form of legal verification the members of the ILG who own a particular piece of land are required to provide birth certificates as requirement for land registration.

d) Stock take of properties

This step involves taking into account anything of economic and cultural value that is on a particular piece of land that is identified for development purposes. The developer has the responsibility to compensate separately for these resources or anything of other value.

e) Certification of ILG is issued to the customary land owners

A certificate which legally verifies that a particular piece of land is owned by a certain portion of people (clan group) is issued to the ILG. This means that any
issues that might arise over a piece of land will be dealt with legally through the court system.

f) Value is added to the land

After the ILG registration and certification is completed the particular piece of land is considered value added, given that it is free from disputes and readily available for the developer to come and use it for development purposes.

   a) Sketch plan of total Clan Land Boundaries

   To avoid disputes within the ILG, a sketch plan of a total mass of land owned by that ILG is developed. This indicates proportions of land within the ILG that is allocated to each sub-clan or family units.

   b) Identification of Land Rights on each block of Land

   The IGLs identify the land over which each sub-clan or family units have rights over a piece of land allocated to them within the ILG land area. This prevents disputes within the ILG when a certain developer comes to develop a portion of land within the ILG or even when the landowner wants to become a developer.

2. Voluntary customary land registration VCLR Act 2009

   VCLR refers to Voluntary Customary Land Registration. This is a situation where groups of people or clans can voluntarily register their land without it being identified by a certain developer. So it is readily available for any interested developer.

The steps involved are:

   a) Registered ILG

The VCLR starts with ILG registration (as explained above)

   b) Sketch Plan of Proposed Project Area

A sketch plan of a proposed project area is submitted to the ABG Land Division,
c) Application for VCLR

Applications for VCLR is documented (as explained above) and submitted to the ABG Lands Division.

d) Issuing Instruction for Land Investigation Report

Upon receiving and screening of the VCLR applications the ABG Lands Division issues instruction for land investigation.

e) Instruction to carryout Land Survey of Project area

After completion of land investigation (as explained above) ABG Lands Division issues instructions for conducting land survey of the proposed project site.

f) Detail Survey of project area

After a first survey is conducted, the ABG Lands Division issues another instruction to conduct a detailed survey for the proposed project. There are three surveys conducted during this process.

g) Registration and issuing of title to the ILG

After successful completion of all the above steps the registration is issued to the ILG.

h) ILG Sub-leases to Developer

The registration of the land guarantees developer confidence to lease a piece of land for any type of development purposes.

The ILG Act 2009 protects both the landowners and the developers and prevents the land from being mortgaged. That is in the event a certain the project fails land is protected from being taken over by the funding agency.

Source: Autonomous Bougainville Government: Lands Department (2014)
Appendix 2

Map 1. Below is the map of PNG illustrating various fish stock availability in different provinces of which for Bougainville is significant.

Map 2: Below is the map indicating Bougainville waters and the fish stock available.

The area illustrated above where the key symbols of different species of fish are surrounded by a line is the Bougainville waters as per the Organic law on Provincial Boundaries: chapter one, Section two. Given that the Organic Law on Provincial Boundaries has not been amended or repealed to date, the Bougainville Provincial boundary is still valid and applicable to Bougainville despite it assuming Autonomy status in 2005.

Sources: PNG. National Fisheries Authority, (2011)
Appendix 3

*BCL’S Net sales revenue: 1972-1980*

<table>
<thead>
<tr>
<th>Year</th>
<th>KINA MILLION (A$)</th>
<th>YEAR</th>
<th>KINA MILLION (A$)</th>
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</thead>
<tbody>
<tr>
<td>1972</td>
<td>95.9 (A$ 46.2)</td>
<td>1982</td>
<td>283.2 (A$141.6)</td>
</tr>
<tr>
<td>1973</td>
<td>252.2 (A$126.2)</td>
<td>1983</td>
<td>392.9 (A$196.45)</td>
</tr>
<tr>
<td>1974</td>
<td>292.6 (A$146.3)</td>
<td>1984</td>
<td>310.9 (A$155.45)</td>
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<tr>
<td>1975</td>
<td>193.1 (A$96.55)</td>
<td>1985</td>
<td>317.6 (A$158.8)</td>
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<tr>
<td>1976</td>
<td>208.9 (A$104.45)</td>
<td>1986</td>
<td>342.7 (A$171.35)</td>
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<tr>
<td>1977</td>
<td>205.3 (A$102.65)</td>
<td>1987</td>
<td>415.5 (A$207.7)</td>
</tr>
<tr>
<td>1978</td>
<td>225.1 (A$112.55)</td>
<td>1988</td>
<td>493.4 (A$246.7)</td>
</tr>
<tr>
<td>1979</td>
<td>343.1 (A$171.55)</td>
<td>1989</td>
<td>231.6 (A$115.8)</td>
</tr>
<tr>
<td>1980</td>
<td>338.7 (A$169.85)</td>
<td>1990</td>
<td>80.2 (A$40.1)</td>
</tr>
<tr>
<td>1981</td>
<td>296.4 (A$148.2)</td>
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</tbody>
</table>

*Source: BCL Annual Report (2005).*
Appendix 4

The 15 step strategic framework for draw down of Mining powers and functions from PNG to Bougainville.

The ABG has requested the transfer (draw down) of powers and functions related to mining, oil and gas and other related resources. This request was formally served on 8 June 2006, consistent with the transfer of powers and function provisions in the BPA (part 7: article a). The next step involves the delegation of the first priority functions under the Mining Act 1992, mainly the grant of mineral exploration licenses. The third step involves a review of Bougainville Copper Agreement and issues concerning Bougainville’s Copper Limited’s exploration license.

The fourth stage is the development of the Bougainville Government’s policies on mining, oil and gas and associated policies that will operate concurrently with other steps and stages until such time as Bougainville is ready to develop its own laws. The fifth, step involves the delegation of 2nd order priority functions to the ABG under its/PNG’s Mining Act. These functions are related to the management of alluvial mining. The sixth, step includes the delegation of 3rd order priority functions under the Mining Act provisions which deal with the establishment of mining tenements (to permit mining projects).

The seventh step is the delegation of any other functions and powers under related laws (including environment and lands) governing the exercise of powers concerning mining tenements. The eighth step deals with the delegation to the ABG of 4th order related functions and powers under mining, mainly re-monitoring of compliance by project operators with conditions for granting the mining tenement.
and for operation of mining projects. The ninth step is where the Bougainville
government begins to develop its own policy and pass ABG laws on mining, and
related powers and functions in accordance with priorities set by the Bougainville
government.

The tenth step includes delegation to the ABG of functions and powers under
related laws relevant to functions regarding compliance with mining tenement
operational conditions, such as mining safety. The eleventh step involves delegation
to ABG powers and functions in relation to first priority functions under the Oil and
Gas Act 1992. This set of powers mainly deals with exploration licenses. The twelfth
step involves delegation to the ABG of powers and functions in relation to second
priority functions under the Oil and Gas Act 1992, namely approval of tenements for
exploration for hydrocarbons. The thirtieth step deals with delegation to the ABG of
third order priority powers and functions under the Oil and Gas Act 1992, mainly
monitoring compliance of project operators with the grant conditions for
operations to extract oil and gas. The fourteenth step involves delegation to the
ABG of those powers and functions covered by the June 2006 transfer request to
the PNG government related to gas and oil functions and powers. The final,
fifteenth, step deals with ABG developing its policies and enacting its own laws for
mining, oil, and gas and related powers and functions as required.

*Source: Autonomous Bougainville Government. Mining Department (2014)*
Appendix 5

**IPDM application to crop cycle**

<table>
<thead>
<tr>
<th>Input application</th>
<th>Peak flower &amp; fruit set</th>
<th>Peak harvest</th>
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<tbody>
<tr>
<td>Jan, Feb &amp; March</td>
<td>April, May, June &amp; July</td>
<td>Oct, Nov, Dec &amp; Jan</td>
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<tr>
<td>(Major peak)</td>
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<tr>
<td>August, September &amp; Oct</td>
<td>Nov, Dec, Jan &amp; Feb</td>
<td>Apr, May, June &amp; July</td>
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<tr>
<td>(Minor peak)</td>
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**Schedules for application of IPDM**

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<tr>
<th>INPUTS</th>
<th>Methods of application</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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<tr>
<td>Weed Controls</td>
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<td>Shade Controls</td>
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<td>Cocoa Pruning</td>
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<td>Fertilizer Application</td>
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<td>CPB Control</td>
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**IPDM and CPB incorporated management options.**

Option 1 is designed for low level destruction by CPB

The current practice starts with good planting materials. To be able to control CPB there is need to adopt the next 3 options (details below).
**Option 2 is designed for medium destruction by CPB:**

This option involves weekly harvest of cocoa pods, pest and disease sanitation, manual weed management, as well as shade and cocoa pruning related to crop cycle. It is recommended that the height of cocoa tree must be maintained to below 4 meters, plus regular harvesting intervals instituted. Burial after each harvest of the infested pods and pod husks is required.

**Option 3, is designed for high level destruction by CPB.**

This strategy includes application of option 2 aspects and additional use of chemicals including herbicides (glyphosate (120 millilitres, plus 80 millilitres sticker, gramoxone 120 millilitre, 80 millilitre sticker). Application of 50 grams of urea fertilizer per year is also needed. For matured and over-grown unpruned trees this process is required to be done for 2 years. This option also requires a regular harvesting interval and infested pods and pod husks to be buried after each harvest.

**Option 4, is designed for very high level destruction by CPB:**

This involves applications of option 3 and additional fungicide inputs. These include the application of *ridomil* and copper oxide to each cocoa tree. Further to this add *Dichlorvos* insecticide is applied to mature trees together with white oil to deal with fungicides.

*Source: PNG Cocoa Board, 2014*