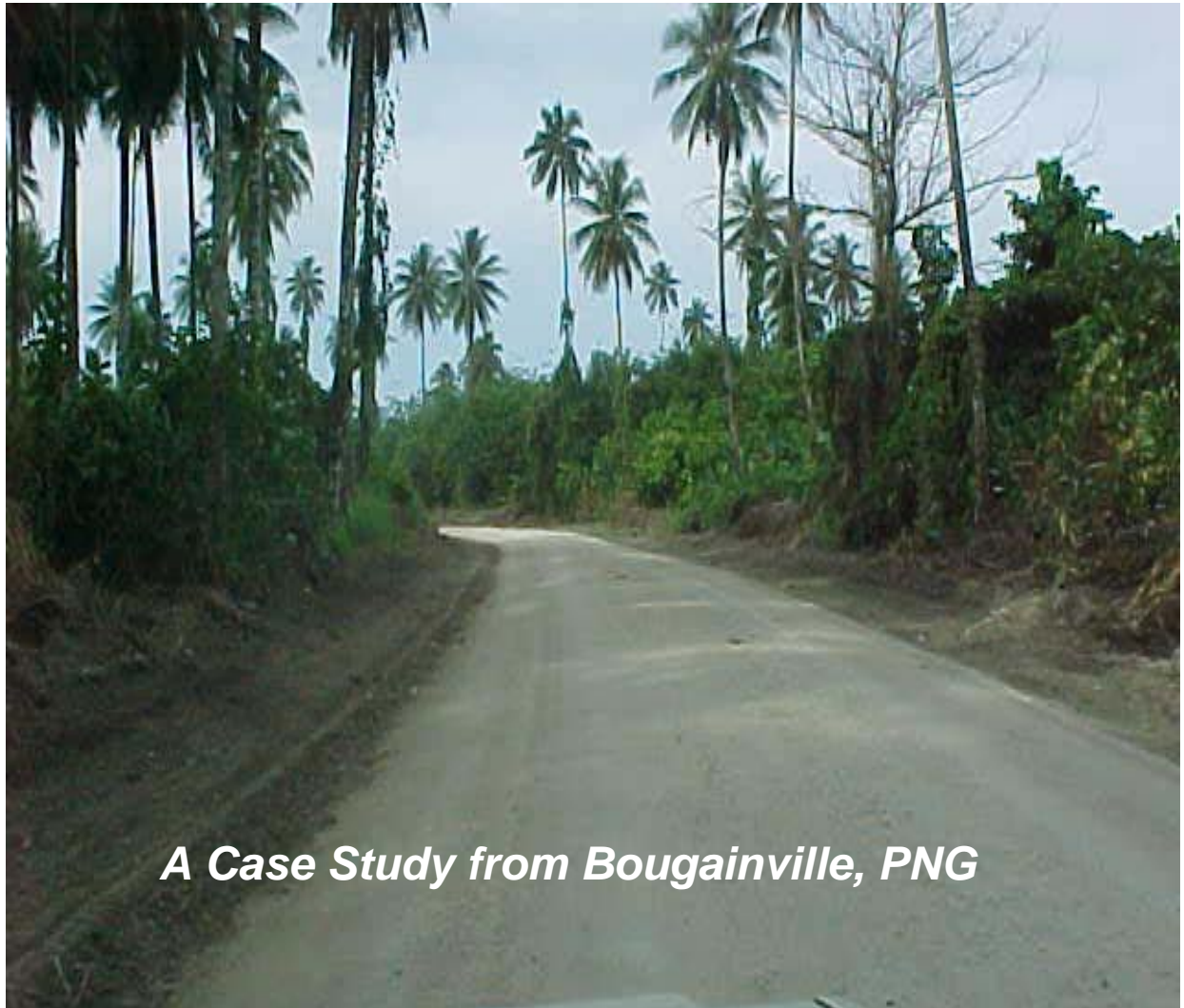


Peace Building through Road Maintenance



A Case Study from Bougainville, PNG

***Peter Kelly, AusAID
10 September 2008***



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Disclaimer

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Abstract

This Paper identifies the role played by road maintenance in a post conflict environment citing a case study from the Autonomous Region of Bougainville in Papua New Guinea. In 1999, after a decade of conflict, Australia commenced a \$45m Program to rehabilitate over 600kms of road using local contractors and community groups.

The case study describes delivery of the road maintenance focusing on four outcomes additional to re-establishing mobility and access to critical services. Outcomes included; income generation for the rural poor; re-establishment of a local Contractor base; strengthening of the peace process; and reduction of rent seeking behavior.

The road network's role in Bougainville's economic recovery after a decade of conflict is self evident. However, restoration of mobility was also critical for supporting the other two essential inputs to peace building, civil society and governance. Aside from its role of enabling delivery of agricultural produce to market, the critical inflow of health and education services, law and justice, and the movement of government officials and other people involved in reconciliation and community strengthening, meant that the trunk road had a multiple role in supporting the full range of inputs to peace building in Bougainville.

Key lessons and experiences for future similar interventions are highlighted.

Introduction

This Paper identifies the key role that can be played by road rehabilitation and maintenance works in peace building within a post conflict environment as evidenced by a case study from the Autonomous Region of Bougainville in Papua New Guinea. The case study looks at the experience of Australian development assistance to the transport sector in Bougainville provided as part of a program of post conflict recovery support provided by the international donor community.

In 1999, after a decade of civil conflict which cost an estimated 20,000 lives, Australia commenced a \$45m Program of financial and technical assistance to rehabilitate and maintain the core road network. A total road length of 637kms was maintained using local contractors and community groups. Journey time between townships has been reduced dramatically and an estimated 200 permanent jobs created in the local road construction industry. The Program included more than 10,000 minor roadwork contracts with community groups resulting in an injection of well over \$7m into a cash hungry rural economy.

This Paper describes the manner in which the Program was delivered and focuses on four distinct outcomes achieved in addition to the re-establishment of mobility between townships and consequent access to critical services. The additional outcomes included (1) income generation and employment opportunity for the rural poor and disadvantaged previously without alternative income sources; (2) re-establishment of a local Contractor base with 22 businesses ; (3) contribution to rebuilding communities and strengthening the peace process ; and (4) reduction of rent seeking behavior amongst landowners adjacent to roadworks.

The role of the trunk road network in Bougainville's economic recovery after a decade of conflict is self evident. However, restoration of mobility was also critical for supporting the other two essential inputs to peace building, firstly repairing the fabric of civil society or rebuilding community and secondly governance or the demonstration of state functionality. Aside from its role of enabling delivery of agricultural produce to market, the critical inflow of health and education services, law and justice, and the movement of government officials and other people involved in reconciliation and community strengthening, meant that the trunk road had a multiple role in supporting the full range of inputs to peace building in Bougainville.

Key lessons and experiences for future similar interventions are highlighted.



Typical Bougainville Coastal Trunk Road washout after heavy rain

Background

There are several post- conflict countries or regions among Australia's development partners including Timor Leste, Solomon Islands and parts of PNG. Identifying and supporting means for recovery by disrupted communities within these locations is amongst the high priorities of Australia's overseas aid program.

The positive role that road rehabilitation and maintenance, *hereafter referred to as roadworks*, can play in recovery of the social fabric within a community fractured by conflict has been highlighted by the experience gained in the Autonomous Region of Bougainville, PNG since a peace accord was brokered in 1999. Resulting from disruption to government services during the period of armed conflict in Bougainville between 1989-1998 roads on the two main islands deteriorated to such an extent they became unusable. Consequently the rural population's access to basic services ceased. Further the local road construction industry, established pre-crisis to service a large scale mining operation¹ in Central Bougainville and maintenance of the islands road network, collapsed as a consequence of the decade long conflict.

Recently a Study² was conducted on the impact of Australian aid to Bougainville. The study looked at a discrete group of projects which separately rehabilitated road, wharves and agricultural infrastructure. All of these projects were aimed at assisting in the region's recovery from the intense conflict. The projects were parts of a loosely coordinated, multi-donor strategy of smallholder agricultural production and export market supply chain rehabilitation intended to boost Bougainville's economy in the post-conflict period. Australian assistance was centred on restoring the export of Bougainville's premier agricultural export crop, cocoa, to pre-crisis levels. The various projects were implemented between 1999 and 2007.

Amongst other things the Study found that the methodology used for delivery of the roadworks had a positive impact on the peace building process. This case study is informed by the Study and the author's own field visits augmented by AusAID project documentation. It discusses those aspects of how the roadwork was packaged and delivered which influenced peace building outcomes amongst local communities.

Rehabilitation and ongoing maintenance of the road network is widely acknowledged amongst the Bougainville population as being one of the major contributing factors in sustaining the peace process and to opening dialogue between the various factions previously in conflict. The positive engagement of communities through the local contracting of road works provided a practical demonstration of the advantages of the peace process and resulted in the dismantling of no-go-zones (NGZ) and restricted areas with exception of restricted access in and around the former mine area in central Bougainville.

Australia's assistance to restoration of Bougainville's core road network has to date totalled in excess of \$45m and comprised a series of three road rehabilitation or maintenance projects³. Australia's support, hereafter collectively referred to as *the Program* had two clear objectives. Firstly to restore the main coastal trunk road and then maintain it to provide reliable access to markets, service centres and ship loading points. The second was to foster the support and involvement of local enterprises and communities in implementation of the roadwork.

1 The Panguna Copper mine operated from 1972-1989 and was once the largest open cut copper mine in the world.

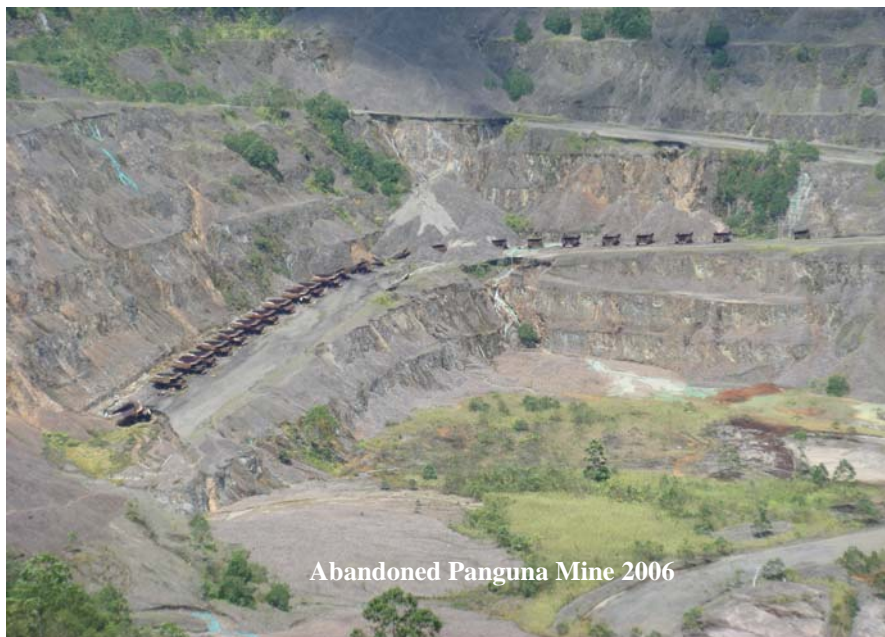
² Scales.I., Craemer.R and Thappa.I., 2008 *Market Chain development in peace building: Australia's road, wharves and agriculture projects in post –conflict Bougainville.* Canberra : AusAID Feb 2008

³ The three projects were; (1) Bougainville Coastal Trunk Road Rehabilitation Project (BCTRRP); (2) 1999-2002, \$13.2m Bougainville Coastal Trunk Road Maintenance Project (BCTRMP), 2002-2006, \$24.2m; and (3) Bougainville Coastal Trunk Road Maintenance Project – Exit phase (BCTRMP-EP), 2006-2007, \$7.4m

Context

The Autonomous Region of Bougainville, formerly known as the North Solomons Province, is an autonomous region in Papua New Guinea with a population nearing 200,000. Located approximately 1000kms east of mainland PNG, it comprises the largest island of Bougainville, an adjacent smaller island of Buka and assorted outlying small islands. The island was named after the French navigator Louis Antoine de Bougainville. In 1885 it came under German administration as part of German New Guinea. Australia occupied it in 1914 and, as a League of Nations mandatory power, administered it from 1918 until the Japanese invaded in 1942 and then again from 1945 until PNG independence in 1975, as a United Nations mandatory power. The island was occupied by Australian, American and Japanese forces in World War II

Bougainville Island is rich in minerals especially copper and gold. As a result of intense geological surveying in the 1960's an open cut mine was developed at Panguna in the early 1970s by Bougainville Copper Limited, a subsidiary of the multinational Rio Tinto. Disputes over the environmental impact, financial benefits, and social change brought by the mine renewed a secessionist movement that had been dormant since the 1970s. It developed into a civil conflict that lasted nearly a decade and claimed up to 20,000 lives. In 1990, the then capital township of Bougainville, Arawa, was virtually destroyed in the conflict that ensued and Buka, a township situated on Buka Island just north of Bougainville Island became the capital of the region. The conflict ended in 1997, after negotiations brokered by New Zealand. A Peace Agreement finalised in 2000 provided for the establishment of an Autonomous Bougainville Government and a referendum in the future on whether the island should become politically independent.



With the advent of peace came the possibility to rebuild defunct infrastructure which it was believed would assist in rebuilding Bougainville's socioeconomic fabric. The Program of roadwork funded by the Australian Government, through its Agency for International Development (AusAID) has rehabilitated 637kms of Bougainville's main coastal trunk road and other key access roads to a near all weather trafficable standard. Australia's support sought not only to re-establish Bougainville's vital trunk road network, but also to create inclusive mechanisms that increased community participation, as a tool for peace building.

Program Data

Total Value:	\$45m -over three road projects 1999-2007
Environment:	Mountainous interior with low-lying areas peripheral to the island. Heavy rainfall commonly leads to river flooding and road washouts.
Rehabilitation & Maint:	637kms of unsealed all weather surface including sealing of 25kms
Technical Standards:	All weather unsealed roads in developed countries
Training:	Formal and 'On the Job' training in civil engineering works and business management and administration
Cross cutting issues:	HIV & AIDs awareness training introduced, Gender equity promoted through targeted engagement with women's groups

Approach

The Program was delivered via a Managing Contractor (MC) model whereby an experienced Contractor with road sector expertise, working in collaboration with both the National and Autonomous Region's agencies, was responsible for implementing the roadwork. This was done by contracting appropriately sized packages of work exclusively to Bougainvillean road construction contractors and community groups. Financing of road works was provided by AusAID grant funds directed through an Advance Payment Trust Account facility. The trust account was managed and operated by the MC.

Managing Contractor

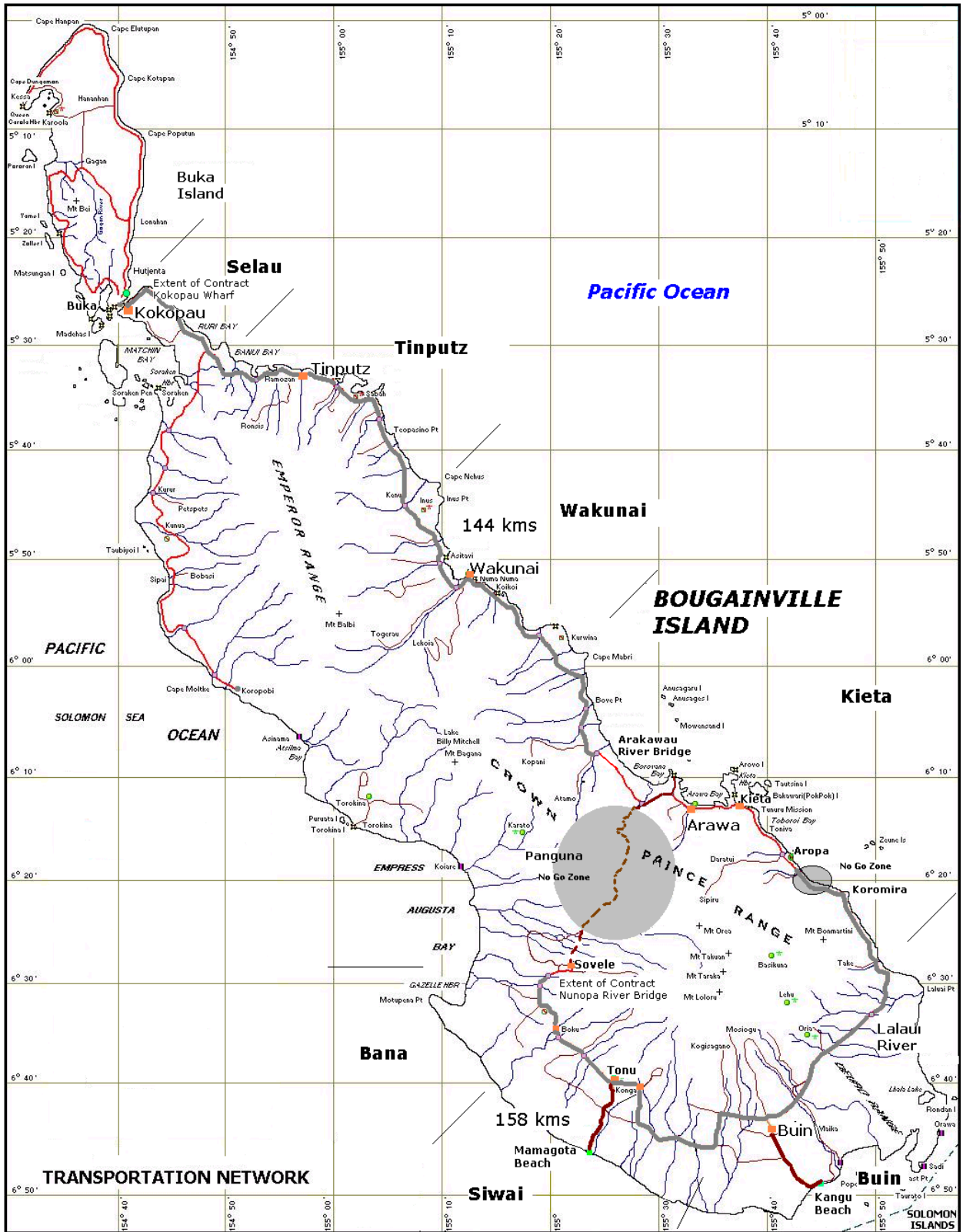
Selection and tasking of the MC was critical to the Program's success. The implementation model made the MC responsible for;

- establishing local contractors and building their capacity,
- establishing road condition and designing the road rehabilitation and maintenance works,
- packaging the works into contract sizes that could be handled by local contractors,
- creating and equitably distributing opportunities for paid work by community groups,
- awarding contract works by bidding or assignment as work location demanded,
- supervising the works including on-the-job training and material testing, and
- administering the contracted works and community agreements

In some areas, usually closer to the NGZs where potential for intercommunity conflict remained, a flexible and dynamic approach to the packaging and contracting of works was required to ensure that the allocation of paid work was seen as equitable. This flexibility was necessary to gain community acceptance and consequent access. A major responsibility included community awareness and consultation across all activities.

AusAID, for the most part, retained the same MC team over the life of the Program. The small field team included two expatriates, a Program Manager and a Roadworks Supervisor, working together with two Bougainvillean former local government technical officers. Part time inputs from local community liaison officers were also provided. Consistency in management personnel enhanced local acceptance of the technical assistance in an environment wary of outsiders. This was particularly so around the no-gone zones where high levels of suspicion and mistrust towards outsiders were prevalent and remain today. The long association the expatriate Program Manager had with Bougainville as a pre-conflict period Provincial Government employee significantly enhanced successful outcomes in community engagement.

Map of Bougainville



Community Agreements

Over 10,000 individual Community Agreements with a combined value of around \$7.5m were implemented over the life of the Program providing a significant cash injection to the rural economy. Typical value for a Community Agreement was around \$500. Community Agreements describe a simplistic contract for road maintenance services agreed between the MC and the community group identified within the immediate area of the roadworks. Typically the MC's field supervisor defined an appropriate package of works, generally menial road maintenance tasks such as drain/culvert clearing or vegetation removal, and then tasked a community group to complete the works at agreed rates.

BOUGAINVILLE COASTAL TRUNK ROAD MAINTENANCE PROJECT - TSSP
FINAL PAYMENT STATEMENT - COMMUNITY AGREEMENTS

I, Henry Kina on behalf of the Managing Contractor / DTS have inspected the said works and hereby certify them complete as listed:

CA Number 5/986/108
Group Name VIDU

The Community Group has successfully completed work in accordance with the scope of works and specification(s) and as specified in the **TERMS and CONDITIONS OF THE COMMUNITY AGREEMENT**.

INSPECTION OFFICER
DESIGNATION:
SIGNATURE:
INSPECTION/CERTIFICATION DATE: 17/07/08

Approved for Completion [Signature] CLAIMED AUG 2008
Designation [Signature]
Signature and Date [Signature] 16/07/08

I, FELIX KAIA Group Leader/Representative,
OF PAMU YAUU have received the amount of:
ONE HUNDRED & TWENTY KILOBAS (KIUBA) K120.00
SIGNATURE [Signature] DATE 16/07/08

DCTRMP-TSSP

A typical Community Agreement payment statement

Work item payment rates were standardised throughout the region to ensure consistency and to avoid potential conflict. Apart from standardised payment rates the Community Agreement documentation – itself kept very simple - included an ILO statement on underage employment as well as standard technical drawings clearly demonstrating requirements for more technical tasks such as bridge redecking, headwall and drain construction. Complex documentation was avoided and substituted with intense on the job training and close supervision of works.

Inclusion of the information on payment rates for work items and drawings of construction details helped to ensure that the community was aware of what is was being paid for and what was expected in return for payment. Payment rates for any non standard or unique tasks were agreed between the MC's field supervisor and the community group

leader. Transparency and public knowledge of all community agreements was a key factor in avoiding disputes between and within community groups. Once works were completed in accordance with the agreement the field supervisor would inspect and if satisfied sign off the works as being completed, thus starting the payment process.

Payment for all works during the early phases was made by cash. Cash payment was logistically expensive and potentially problematic from a security viewpoint, often requiring use of a helicopter for bulk cash transfer. As the economy re-established and limited banking facilities became available, payments were changed from cash to cheque. Again transparency of the payment system was crucial in regards to the Community Agreement works with the community leader required to sign for receipt of payment against the agreed level of works completed for the task schedule.

The contracting of community groups represented approximately 25% of total Program works expenditure. Whilst the management of over 10,000 minor contracts was an administrative

burden the approach was fundamental to building and maintaining community acceptance of the Program and consequently a key success factor.



A community group constructing a Ford approach by CA, 2006

Greatest demand for participation in Community Agreement works came around the time of school fees, Christmas and family celebration events.

Outcomes

The role of the trunk road network in Bougainville's economic recovery after a decade of conflict is self evident. However, restoration of mobility was also critical for supporting the other two essential inputs to peace building, firstly repairing the fabric of civil society or community rebuilding and secondly governance or the demonstration of state functionality. Aside from its role of enabling delivery of agricultural produce to market, the critical inflow of health, education and law and justice services, and the movement of government officials and other people involved in reconciliation and community strengthening, meant that the trunk road had a multiple role in supporting the full range of inputs to peace building in Bougainville.

The roadworks and adoption of a community contracting approach is often acknowledged by Bougainville people to have had a positive impact on the peace process. This impact is usually discussed in terms of the ease of mobility for people engaged in civil society activities, governance and post-crisis reconciliation meetings, which are still occurring. The income and employment provided from the roadworks and the re-emergent agricultural sector has had a strong stabilising effect particularly in the northeast where agricultural production is strong. The impact has not been as positive in the south where the road program has been limited by access constraints and agricultural production is weak. The ensuing unemployment appears to feed into the ongoing political instability of this region (Scales et. al. 2008).

Journey time between the key townships of Arawa and Buka has reduced from 8 hours to 4 hours. There are now at least 22 local contractors providing at least 200 people with formal employment in the road construction industry and the region's cocoa production is back to pre-crisis levels (Scales et. al. 2008).

Income generation and employment

Increased income to the rural community resulting from the roadworks - and other agricultural development projects - strengthened the smallholder farmer household economy and encouraged small business. Indications were found that ex-militants are putting the crisis of 1989-1999 behind them (Scales et. al. 2008). In total the Program delivered \$45m of financial assistance with \$7.5m (25%) paid directly to community groups for routine road maintenance activities, around \$25m (55%) paid to local Contractors for road rehabilitation and maintenance works. The balance was for Program management and some capital equipment costs.

Contractors usually employed individuals or community groups living in the vicinity of contract work independent of Community Agreements. Consequently, when these two sources of income are considered the total value of employment provided by the Program to the rural community is estimated to be 2 to 3 times the \$7.5m value of work under Community Agreements alone.

Clearly the arrival of the road works program enabled a very large and timely injection of money into a cash hungry economy. Most importantly the delivery of roadworks through local contractors and community groups enabled direct transfer of cash income to those enterprises and communities largely without alternative opportunities. For example, in the period 2006-2007 the community road teams comprised 16% of male youth (under 24 years of age) and 19% females (Figure 1). The two groups had limited opportunities for gainful employment in the post-conflict economy (Scales et. al. 2008).

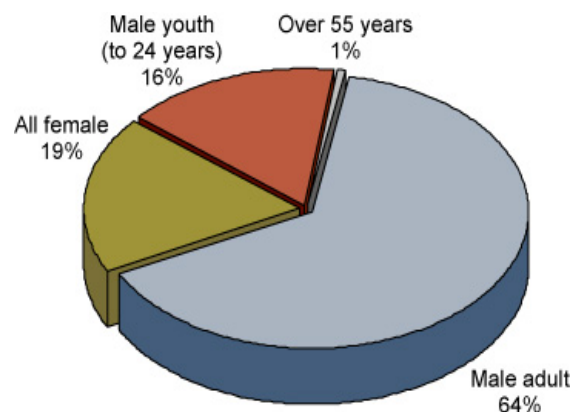


Figure 1. Community Road Teams by gender and age, 2006-7

Flow-on effects to the local economy included higher rates of school fee payments which increased attendance; improved household diets (consequent of improved access to markets and trade stores and improved household income), additional economic activity and trade. An example of the increased trade is the increasing emergence of small open air morning markets ranging from tiny village bring-and buy activities to regular barter markets which now exist at various locations around Bougainville (Scales et. al. 2008).

A significant issue for Bougainville is the population's youth bulge. The generation that is now reaching its early twenties has missed most, or all, of its schooling due to the crisis, particularly in the south. It has also witnessed years of extreme violence. Illiteracy, low vocational skill levels, mistrust of government process and trauma-based violence is characteristic of this lost generation. Theory of youth bulges suggests that these features, combined with poor economic prospects, ensure that young men will remain a volatile element in south Bougainville. For this reason the need for gainful employment such as that provided by the long term Program of roadworks was important for peace building (Scales et. al. 2008).

Re-establishing the Local Contractor Base

The primary Program objective was to rehabilitate and then maintain the trunk road network to an all weather standard using local resources. As a result of local sensitivities following the period of armed conflict it was not feasible to utilise Contractors from mainland PNG or International Contractors for the work. Therefore it was necessary to adopt a contracting strategy that built upon the residual civil and mechanical engineering skills base remnant from former Panguna mine employees or contractors. At Program commencement there was a small amount of road making plant available on Bougainville remnant from either the Panguna mine or the pre-crisis GOPNG Department of Works fleet. The fleet was old, dilapidated and widely dispersed.



At Program outset in 1999 some thirteen small local enterprises, mostly individuals, were identified throughout the two islands as potential contractors for Program participation. Many were individuals who had plant operating skills acquired during former employment at the Panguna mine. Some had dilapidated items of road making plant 'acquired' from the abandoned mine site. Today, following the deliberate efforts to use and build local contractor capacity for Program delivery, there are three principal⁴ Contractors, thirteen second tier Contractors and at least 6 less significant small plant owner operators currently available for work on Bougainville. Most are now competent at quoting and administering small scale contract works. One of the Principal Contractors is now also operating in the neighboring Solomon Islands.

Many of the larger contracted packages of works were awarded to a loose grouping of small regional Contractors. This practical arrangement enabled the necessary equipment fleet to be assembled and at the same time allowed economic opportunities to be shared amongst the developing contractor fraternity.

⁴ In early 2008 the MC informally rated Principal Contractors as those having an estimated turnover of PNGK 3-6m and the second tier Contractors as those with estimated turnover less than PNGK 3m.



Destroyed Panguna Mine Loader , 2004

The largest of the three principal contractors is a company known as South Bougainville Engineering (SBE). It is one of the main plant owners, and is lead partner of the Southern Consortium⁵. SBE has implemented many of the larger contracts awarded under the Program. The company was formed in 1993 by local community leaders who foresaw opportunities for post-conflict road rehabilitation.

Initially, and in order to be awarded contracts, SBE had to form a partnership with other plant owners, to assemble the plant required. SBE adopted a strategy of providing key earthmoving equipment, but subcontracting less critical plant operations such as cartage to smaller independent truck owners and the like. This began the consortium concept. As the contractors obtained more work through the Program, so they built up their plant. Smaller players restored pre-crisis plant and equipment – often with MC technical support - while larger players invested in new or second hand equipment. SBE is owned by the seven Councils of Elders in Buin, a District in Southern Bougainville. Each Council receives dividends and each has a director on the SBE board. The essentially community nature of SBE's shareholders means that SBE seeks profitable work while also doing gratis community work, such as leveling of village sports fields. It is also concerned with fostering work among the small independent operators. Whilst it must be stated that SBE's development is largely due to the character and business acumen of its senior management team this company's sound reputation has more recently seen successful diversification into provision of building construction services as well as roadworks.

Responding to a very shallow local contractor market the MC started out by awarding plant hire and day labor type contracts for small packages of road rehabilitation work. The local Contractors' weak supervision skills were supplemented with intense levels of field support and technical assistance from the MC. This approach could be best characterized as *on the job training*. Over time – around 8 years- this intense support enabled the contracting model to be developed from a predominantly plant hire and day labor payment basis (input based) to the current competitive tendering performance contract model with a schedule of rates payment basis (output based). Technical support provided by the MC's field team to the local Contractors ranged from providing training in preparing and administering competitive quotations, practically assisting with overseas procurement and installation of replacement parts for aged plant, and even demonstrating how to operate new plant as it was acquired by some of the larger Contractors. Another important factor was the MC's provision of ongoing training to the local contractors in business management skills as well as technical aspects. Whilst generally the local contractors were quick to develop road building skills they often found it difficult to manage business aspects (cashflow, wages, acquittals, tax etc), a challenge with direct impact on their performance and sustainability.

More recently the contracting model has developed further with responsibility for direct management of Community Agreements being transferred from the MC to local Contractors. Whilst this development further enhances the sustainability of the community engagement approach, it does rely on ethical and transparent management being practiced by the contractors. To date it is working satisfactorily.

Contractors need access to finance to grow their businesses. Unfortunately this aspect was not within the Program scope and remains an issue largely unaddressed in Bougainville. One PNG based financial institution became increasingly supportive of one of the larger

⁵ The Southern Consortium describes the informal coalition of medium to small scale contractors who are based in the Southern region of Bougainville. Likewise there is a central consortium.

Contractors and provided finance that enabled plant fleet expansion and access to short-term equipment lease financing. It is understood that the security of large value contracts awarded by the Program influenced extension of credit (Scales et. al. 2008).

The Program has clearly been successful in building a substantive local road Contractor base on Bougainville. However, for the time being sustainability of the Contractor base and the road network remains heavily reliant upon continued donor financing due to the limited fiscal resources of the Autonomous Government. This is a challenge that remains to be resolved. Clearly the work ethic and the less traditional 'social development' approach of the MC's field team, with their broad skill sets and willingness to be 'hands on' wherever the need arose, was instrumental to success in developing the Contractor base to today's level.

Rebuilding communities and strengthening the peace process

As a result of almost a decade of warfare the Bougainvillian community economy had all but collapsed leaving the population traumatized and suspicious of any new activity. Moreso when interventions involved outsiders who provide a reminder of the Panguna mining company intervention. One of the key challenges faced during Program implementation was the high levels of unresolved conflict existing at both the personal and community level. This residual conflict had potential to arise in many of the community engagement activities related to the road works planning and delivery. For example, during the conduct of public meetings to disseminate information on proposed local Program activities (Scales et. al. 2008).

The peace process was a major beneficiary of the earlier Program phases. In addition to physically re-opening the coastal trunk road and enabling mobility between townships the Program has also been a catalyst for opening dialogue between various factions and interest groups. The ability of Bougainvilleans to again travel outside their clan areas and to participate in economic, political and sporting activities has assisted in breaking down the psychological barriers to peace and aided the reconciliation process. Among community activities, church attendance and attendance of church social groups is most common in Bougainville. The road restoration facilitated travel to church and district functions such as rallies and meetings. For young people, the costs of holding district sporting events are lowered and attendances increased due to better road transport. NGOs, particularly umbrella NGOs such as the Bougainville Women's Council, rely on the road to congregate for meetings and workshops.

Reinstating mobility also facilitated other donor supported development activities to be implemented including re-establishment of health posts, police stations and schools. The ability to drive between centres significantly reduced transport costs – often previously reliant on helicopter movement - allowing easier access for peacekeeping and monitoring activities in support of the peace process (Scales et. al. 2008).

The use of Community Agreements often required cooperation between various community groups to form viable contracting entities to undertake the contracted works. This, and a need to allow groups from outside a particular area or district to work on the roads in that area, has further opened communication on the island. The Program has also either directly or indirectly resulted in lifting of NGZs and travel restrictions covering some sections of the trunk road. This was particularly evident at the Aropa NGZ where community pressure, as a result of failure of their area to obtain benefits from road rehabilitation, lead to eventual lifting of the NGZ.

One example of the sensitivity present during the earlier phases of the Program relates to the movement and use of serviceable road making equipment from one community to another. Initially such movement and the perceived loss of a 'valued community asset' had the potential to create contention amongst communities. Thus developing a spirit of intercommunity assistance required careful analysis and problem solving support from skilled

local community liaison officers. Over time, and with increasing evidence of benefits from improving road access, the degree of intercommunity cooperation increased markedly. To help facilitate this process the MC's expatriate staff undertook specific training in Melanesian conflict resolution techniques. They also learnt to converse in local dialects which enhanced community acceptance especially at awareness meetings.

Another beneficial tool used at the Program outset was a Community Situational Assessment which, amongst other things, surveyed the expectations and concerns of community groups impacted by proposed activities. Another important input was the preparation and implementation of a comprehensive information dissemination campaign involving all available media forms and public presentations. The initial awareness and consultation phase lasted six months before any physical works were commenced such was the emphasis on getting the Program message across and breaking down the high level of mistrust. In the post conflict atmosphere where citizenry were generally without reliable public broadcasting and newspapers, individuals were news hungry and willing to listen to virtually any source. Consequently there was great potential for misinformation to be passed through ad hoc processes and word of mouth with Program delivery intentions and outcomes either misused or distorted with a destabilizing impact. The use of established leadership structures including the Council of Elders and the Council of Chiefs within local areas was also critical to the Program's success, particularly with community engagement and conflict resolution.



Roads were often only passable by Tractor prior to the Program

One particular group which benefited from the Program's delivery model was the young ex-combatants. Youth and youth leaders acknowledged that for young ex-combatants being involved in the gainful employment offered by the road works had both economic and social merit. Youth, not directly involved in agriculture were vulnerable to becoming involved in less socially acceptable activities. Whilst ex-combatants, including youth, held a position of respect to the community for having fought in the conflict, most needed to find a new way in the world where their existence was dependent on both traditional subsistence activities and modern economic roles. Many youth's experience had been dominated by warfare having had no opportunity to participate in the modern economy.

Reduction of Rent Seeking Behavior

A consequence of the decade of conflict in Bougainville is the unofficial change in land tenure and the increased hold customary landowners now have over land, including roadways, which were deemed public in pre-crisis times (Scales et. al. 2008). Under these circumstances, the Program's activities were remarkably free of local closures and vexatious claims for rent in return for access to site and road making materials. This outcome contrasts to that in other parts of PNG, most notably the Highlands region, where typically roadwork is associated with a relatively high incidence of traditional landowner compensation claims even where the works are essential to clear landslips causing road closures. There have also been incidences of local rent seeking from road works in post-conflict Solomon Islands.

The notion of a roadway as a public good providing shared access to markets and services is often distorted in a post-conflict environment for a range of complex reasons. That the Bougainville road program has been able to largely avoid disruption validates the positive impact of carefully targeting community engagement in the work. Community participation through direct Community Agreements, or as a subcontractor to larger local Contactors, provided local landowners, or minority groups with the potential to be disruptive, with a vested interest in progressing works without delay.

An indirect effect of injecting money into the community through roadwork employment has been an increase of public equity in the road. This has acted to restore the notion of the road as a public good. The exception is the one remaining restricted area around the Panguna mine. Recently however, there are reported signs that this restriction will soon be lifted consequent of local community pressure upon militant group leaders to join in, and enjoy the benefits from, local development opportunities such as employment through the ongoing roadworks.



Remaining No Go Zone near Panguna Mine 2006

Gender Equality

The targeted involvement of women in the Program has seen a positive impact on gender equality. Initially women were reluctant to participate in Community Agreement works as routine maintenance activities were seen historically as being a male dominated role. Over time that perception has been changed as the opportunity to earn income was recognized. By the completion of the most recent Program phase the reported level of participation of women in community based contracting had grown to 19%.



Women typically undertook routine maintenance tasks such as roadside grass cutting

Conclusion & Key Lessons

The long term Program of road rehabilitation and maintenance on Bougainville has been successful, particularly in the more stable and economically prosperous North. Not only has the Program achieved its objectives of restoring mobility and building local capacity it has also made an acknowledged contribution to the peace building process. The major factors in this success have been the longevity of the support and the emphasis on utilisation of local resources with consequent high levels of local ownership of outcomes. A further factor was the retention of a respected and respectful in-country management team over the life of the Program. However, long term sustainability, with the need to transition from donor funding to government funding, poses a significant challenge.

Key lessons include (Scales et. al. 2008):

Economic Stimulus: Targeted implementation of a large part of the roadworks program directly through community groups provide an equitable and transparent means of injecting money into a cash hungry economy whilst also building the community economy.

Local Capacity Building: The roadworks were implemented through local rather than foreign contractors and imported equipment. Although requiring relatively intense management and supervision inputs the approach led to the re-establishment of a local road building capacity and consequently a reduction in future asset management costs.

Community Integration: The use of community groups on roadworks both lowered the cost of road maintenance as well as the potential for rent seeking behaviour as the local communities had a vested interest in work progress.

Peace Facilitation: The improved mobility afforded by restoration of the road network has increased community activities and strengthened social capital. This has taken two forms: a) direct peace-building activities such as reconciliation meetings, governance meetings of Councils of Elders, various committee meetings, meetings of service organisations such as NGOs and church groups, and b) sports activities. Community networks have begun to extend beyond small-scale clan association.

Management Team Selection: In a post conflict environment, where residual suspicion and mistrust of outsiders can be high, considerable emphasis must be placed on the selection and tasking of expatriate personnel to ensure that those selected have the requisite broad skills mix, particularly communication skills, as well as appropriate cultural sensitivity.

Sustained Support: In a post conflict environment, where an infant Government's governance and service delivery capacity is typically weak, programs of support should be long term to enhance and sustain outcomes.

Donor Harmonisation: Although the various Donor assisted activities largely complemented each other they did not respond to any overarching infrastructure recovery plan. Consequently, in the absence of a common performance framework, opportunities to further strengthen outcomes were missed.

Social Marginalization: The emphasis on trunk road rehabilitation to the exclusion of feeder roads did leave some more remote groups marginalised. Given availability of resources, a supportive feeder roads program would have linked many adjoining populated areas to the trunk road.

Acronyms

ABG	Autonomous Bougainville Government
AUD	Australian Dollars
BCTRERP	Bougainville Coastal Trunk Road Emergency Rehabilitation Project
BCTRMP	Bougainville Coastal Trunk Road Maintenance Project
BCL	Bougainville Copper Limited
CA	Community Agreement
COE	Council of Elders
COC	Council of Chiefs
GOPNG	Government of Papua New Guinea
ILO	International Labour Organisation
M	Million
MC	Managing Contractor
NGZ	No Go Zone
NGO	Non Government Organisation
PNG	Papua New Guinea
PNGK	Papua New Guinea Kina

Currency:

Values are given in Australian dollars (\$) unless otherwise noted.

Bibliography

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